


SEWAGE HEAT TRANSFER SYSTEMS

THE ULTIMATE RENEWABLE ENERGY SOURCE



The Sewage Heat Transfer System allows for environmentally friendly, energy efficient, trouble-free transfer of energy to and from the raw sewage leaving almost every building in the world.

SIMPLIFYING WASTE HEAT RECOVERY

Provides the highest efficiencies in heating, cooling, and domestic hot water applications in the Industry

CREATING LOCAL OPPORTUNITIES FOR GLOBAL IMPROVEMENT

SEWAGE HEAT TRANSFER INC.



CONCEPT

Waste water is a constant inexhaustible energy source and it exists in the waste water streams of residential , commercial, and industrial buildings. It is higher in temperature than most other regenerative energy sources such as well water or geo-exchange, reaching an average temperature of over 25°C (77°F) when exiting buildings. In septic drains the average temperature is 15 °C (59°F).

Traditionally, waste water heat could only be extracted after being purified at the treatment facilities. However, modern heat pump technology allows for extraction of sufficient energy from raw sewage streams for the space conditioning requirements of most buildings. Waste water heat recovery can be used in both the winter for space and domestic water heating, as well as in summer for efficient operation of air conditioning systems.

ENERGY SAVINGS

- € COP 's in heating 5.3 and higher
- € Cooling EER 's over 20.0
- € Primary energy cost reduction: 30-75%
- € CO2 reduction: 30-75%
- € Return on Investment: 1-5 years
- € Capital cost reduction

OTHER ADVANTAGES

- € Potential LEED credits due to very high energy efficiency
- € Architectural flexibility—reduce, or eliminate requirement for Cooling Tower
- € Physical space savings versus other sewage heat recovery technologies
- € Retrofit and new construction adaptability



CLOG PROOF RAW SEWAGE FILTERING

The Sewage Heat Transfer [SHT] System filters the raw sewage and intercepts the suspended solids. It allows the filtered sewage water to enter a heat exchanger where heat is either rejected to or extracted from the filtered sewage water. The filtered sewage water then returns to the intercepted solids and is discharged back to the sewage main pipe. Vast quantities of heat can be moved to and from the raw sewage without clogging the SHT System.

INSTALLATION BENEFITS

- € Clog proof design
- € Full backup capability for zero down time
- € Modular, ready to install
- € 4 pipe and 6 pipe connections available
- € Available in Heat Recovery and Heat Pump applications
- € Fully automated, DDC controls with BACnet interface
- € LCD display with display lights and ongoing energy monitoring
- € Minimal system intrusion on setup—tie into existing sewer lines
- € Factory maintenance and warranty for 5 years available

GRAPHIC DISPLAY CONTROL PANEL

AUTOMATED LOGIC CONTROL SYSTEM AND DISPLAY PANEL

- € 15" monitor—touch screen interface
- € BACnet interface
- € Internet accessible
- € Standalone operation
- € Cooling and heating staging
- € Optimizing control
- € Security access to prevent unauthorized change of setpoints
- € Automatic switchover for redundant applications

MONITORED POINTS

- € Temperatures in and out of process and source water
- € Pressure drops across system and heat exchangers
- € Pump control and monitoring of pump ampacity
- € Ongoing graphical tracking of power consumption of entire system
- € Instantaneous calculations of COP and Energy Consumption and Greenhouse gas savings
- € Trending of all energy consumption, temperatures, COP to compare over time
- € System status screen
- € Alarm tie in—both software and hardware points



SEWAGE HEAT TRANSFER SYSTEM—NON-HP OPTION

SHT MODEL No.	SHT-220	SHT-440	SHT-660	SHT-880	SHT-1100	SHT-1320
PERFORMANCE						
Nominal Capacity (MBH)	800	1600	2400	3200	3950	4750
<i>Source</i>						
- Flow Rate (GPM)	150-290	300-500	550-750	750-980	1000-1200	1200-1450
- Pressure Drop (ft/head)	5-15	5-15	5-15	5-15	5-15	5-15
- Connection Size (inches)	4	6	6	8	8	10
<i>Load</i>						
- Flow Rate (GPM)	175	350	525	700	875	1050
- Pressure Drop (ft/head)	3-15	5 - 15	5 - 15	5 - 15	5 - 15	5 - 15
- Connection Size (inches)	4	6	6	6	8	8
ELECTRICAL						
Power	120/1/60	120/1/60	120/1/60	120/1/60	120/1/60	120/1/60
FLA- (Amps)	12	12	12	17	17	17
Min. Circuit Amps- (Amps)	16	16	16	21	21	21
kW	2.5	2.5	2.5	5.67	5.67	5.67

SHT MODEL No.	SHT-1760	SHT-2200	SHT-2640	SHT-3080	SHT-3520
PERFORMANCE					
Nominal Capacity (MBH)	6350	8000	9500	11000	12700
<i>Source</i>					
- Flow Rate (GPM)	1500-2000	2000-2400	2400-3000	3000-3350	3350-3900
- Pressure Drop (ft/head)	5-15	5-15	5-15	5-15	5-15
- Connection Size (inches)	10	12	12	12	14
<i>Load</i>					
- Flow Rate (GPM)	1400	1750	2125	2450	2800
- Pressure Drop (ft/head)	5 - 15	5 - 15	5 - 15	5 - 15	5 - 15
- Connection Size (inches)	8	10	10	12	14
ELECTRICAL					
Power	120/1/60	120/1/60	120/1/60	120/1/60	120/1/60
FLA- (Amps)	17	32	32	32	32
Min. Circuit Amps- (Amps)	21	38	38	38	38
kW	5.67	7.2	7.2	7.2	7.2

NOTE: All nominal capacities are based on the following:

HEATING

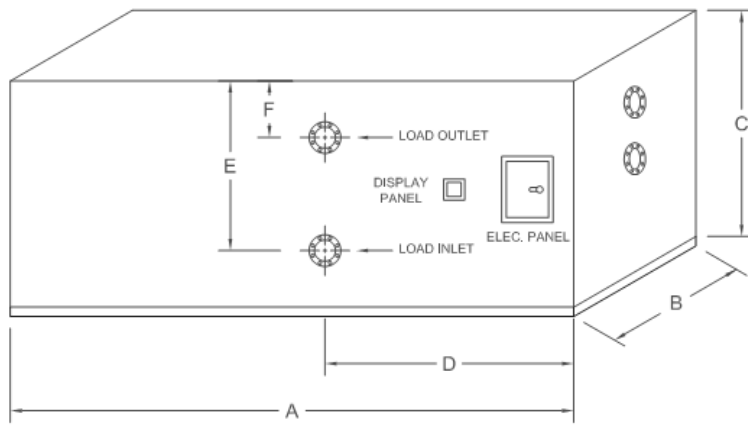
* Source entering / leaving - 68°F/61°F. Heating Mode

* Load entering / leaving - 63°F/54°F Heating Mode

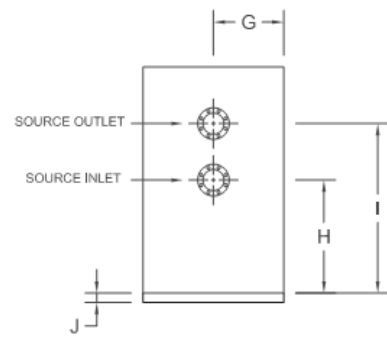
COOLING

* Source entering / leaving - 68°F/74°F. Cooling Mode

* Load entering / leaving - 78°F/69°F Cooling Mode



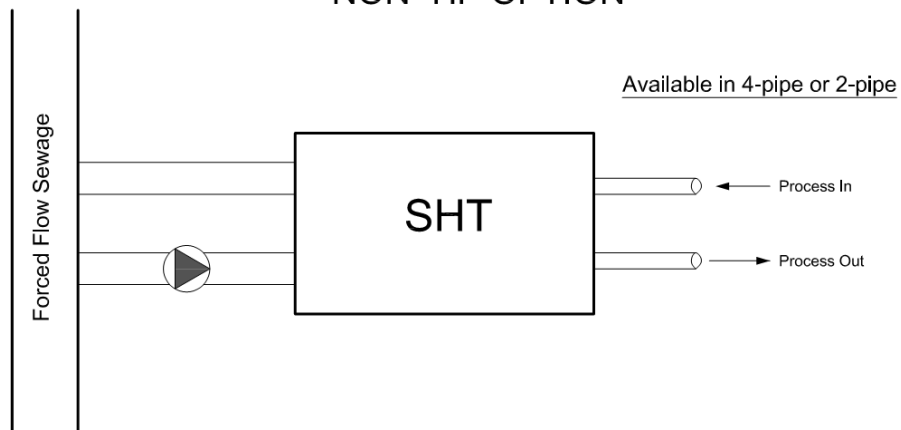
FRONT VIEW



SIDE VIEW

SHT MODEL No.	220	440	660	880	1100	1320	1760	2200	2640	3080	3520
WEIGHTS (lbs)											
Shipping Weight	5350	5350	5450	5525	5900	6000	6025	8850	8900	12500	12500
Operating Weight	5750	5750	5850	5925	6500	6600	6625	9650	9700	13300	13300
DIMENSIONS (in)											
A- Unit Length	127	137	147	173	187	214	229	255	269	295	309
B- Unit Width	59	59	59	62	62	72	72	74	81	83	85
C- Unit Height	66	66	66	66	78	90	90	120	120	120	120
D- Load Inlet/Outlet	100	100	106	108	110	112	115	120	120	126	126
E- Load Inlet	72	72	72	72	74	74	74	80	80	84	84
F- Load Outlet	24	24	24	24	26	26	26	32	32	36	36
G- Source Inlet/Outlet	30	30	30	31.5	31.5	34	34	37	37	40	40
H- Source Inlet	38	38	38	38	48	56	58	58	60	60	60
I- Source Outlet	52	52	52	52	58	68	70	74	80	84	82
J- Base Rail Height	4	4	6	6	8	8	8	10	10	12	12

**HEAT/COOL + DOMESTIC HW SYSTEM
NON- HP OPTION**



SEWAGE HEAT TRANSFER SYSTEM—HP OPTION

SHT MODEL No.	220-HP	440-HP	660-HP	880-HP	1100-HP	1320-HP	1760-HP	2200-HP	2640-HP	3080-HP	3520-HP
PERFORMANCE											
Source											
Flow Rate (GPM)	150-290	300-500	550-750	750-980	1000-1200	1200-1450	1500-2000	2000-2400	2400-3000	3000-3350	3350-3900
Pressure Drop (ft/head)	5-15	5-15	5-15	5-15	5-15	5-15	5-15	5-15	5-15	5-15	5-15
Connection Size (inches)	4	6	6	8	8	10	10	12	12	12	14
Load- Cooling											
Cooling Capacity (tons)	75	150	225	300	375	450	600	725	900	1000	1200
Cooling Efficiency (EER)	22.7	22.7	22.7	22.7	22.7	22.7	22.7	24.2	24.2	24.2	24.2
EWT/LWT (°F)	53/44	53/44	53/44	53/44	53/44	53/44	53/44	53/44	53/44	53/44	53/44
Flow Rate (GPM)	200	400	600	800	1000	1200	1600	2000	2500	2750	3250
Pressure Drop (ft/head)	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20
Connection Size (inches)	6	6	6	6	8	8	8	10	10	12	14
Load- Heating											
Heating Capacity (MBH)	878	1756	2634	3512	4390	5268	7024	8504	10630	11693	13819
Heating Efficiency (COP)	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.21	5.21	5.21	5.21
EWT/LWT (°F)	99.1/110	99.1/110	99.1/110	99.1/110	99.1/110	99.1/110	99.1/110	99.4/110	99.4/110	99.4/110	99.4/110
Flow Rate (GPM)	200	400	600	800	1000	1200	1600	2000	2500	2750	3250
Pressure Drop (ft/head)	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20
Connection Size (inches)	6	6	6	6	8	8	8	10	10	12	14
ELECTRICAL											
Power	Amperage shown as 460/3/60 - 575/3/60										
Min. Circuit Amps	133/106	266/213	398/319	531/425	664/531	797/638	1063/850	963/770	1203/963	1324/1059	1564/1252
RLA (Amps)	118/94.5	236/189	354/284	472/378	590/473	708/567	944/756	853/686	1067/857	1173/943	1387/1114
L.R.A (Amps)	313/258	431/353	549/447	667/542	785/636	903/731	1139/920	1118/895	1332/1067	1438/1152	1652/1324

NOTE: All nominal capacities are based on the following:

HEATING

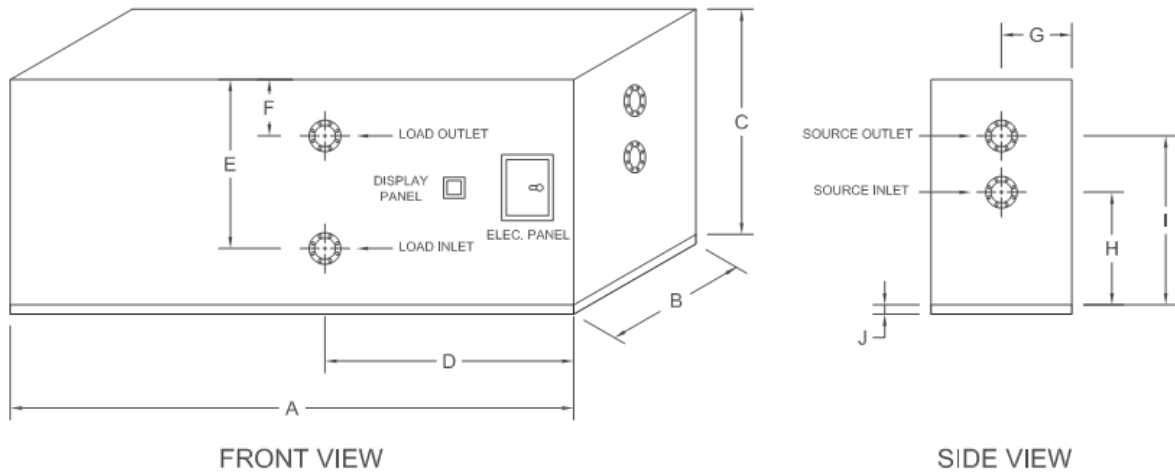
* Source entering / leaving - 68°F/61°F. Heating Mode

* Load entering / leaving - 63°F/54°F Heating Mode

COOLING

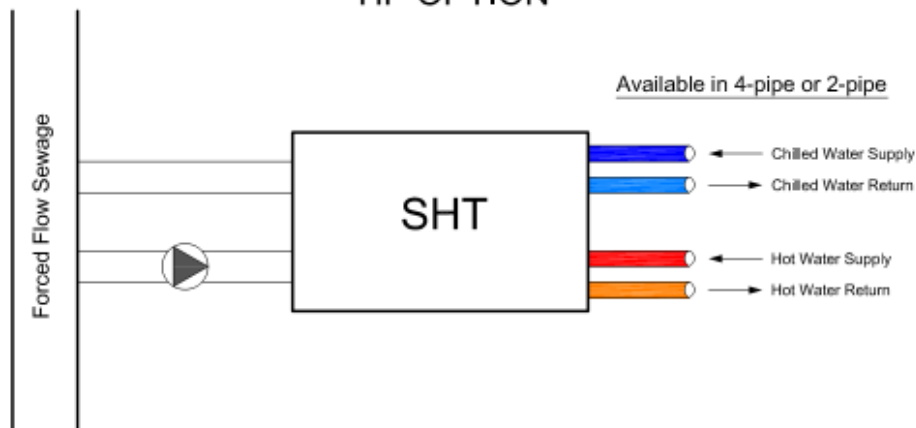
* Source entering / leaving - 68°F/74°F. Cooling Mode

* Load entering / leaving - 78°F/69°F Cooling Mode

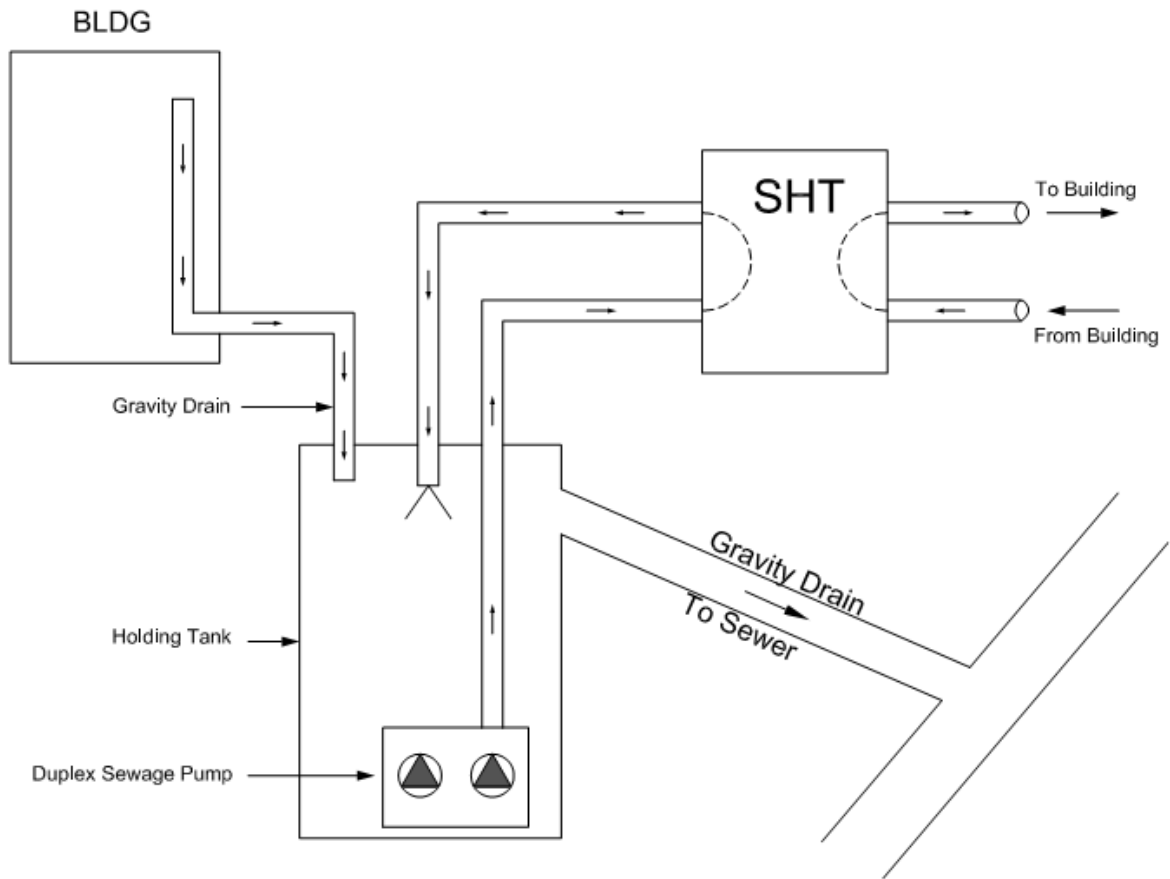


SHT MODEL No.	220-HP	440-HP	660-HP	880-HP	1100-HP	1320-HP	1760-HP	2200-HP	2640-HP	3080-HP	3520-HP
WEIGHTS (lbs)											
Shipping Weight	5350	5350	5450	5525	5900	6000	6025	8850	8900	12500	12500
Operating Weight	5750	5750	5850	5925	6500	6600	6625	9650	9700	13300	13300
DIMENSIONS (in)											
<i>SHT MODULE</i>											
A- Unit Length	127	137	147	173	187	214	229	255	269	295	309
B- Unit Width	59	59	59	62	62	72	72	74	81	83	85
C- Unit Height	66	66	66	66	78	90	90	120	120	120	120
D- Load Inlet/Outlet	100	100	106	108	110	112	115	120	120	126	126
E- Load Inlet	72	72	72	72	74	74	74	80	80	84	84
F- Load Outlet	24	24	24	24	26	26	26	32	32	36	36
G- Source Inlet/Outlet	30	30	30	31.5	31.5	34	34	37	37	40	40
H- Source Inlet	38	38	38	38	48	56	58	58	60	60	60
I- Source Outlet	52	52	52	52	58	68	70	74	80	84	82
J- Base Rail Height	4	4	6	6	8	8	8	10	10	12	12
<i>HP MODULE</i>											
Unit Length	55	92	129	166	203	240	314	314	388	425	500
Unit Width	56	56	56	56	56	56	56	70	70	70	70
Unit Height	60	60	60	60	60	60	60	72	72	72	72

HEAT/COOL + DOMESTIC HW SYSTEM HP OPTION



DOMESTIC HW OPTION



CONTACTS

SEWAGE HEAT TRANSFER INC.

4638 Hastings St.
Burnaby, B.C. V5C 2K5

LYNN MUELLER

Phone: 604-569-0313

Fax: 604-294-0042

Cell: 604-788-1091

Email: lynn@sewageheatrecovery.com

Website: www.sewageheatrecovery.com

