DRYAIR

Heat Dry Thaw Cure

DryAir manufactures a full line of modular components,

ensuring that you have the right tools for the widest range of applications

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WELCOME

DryAir Set-Up Training Program

PRESENTATION OVERVIEW

1. Introduction of Key Personnel
2. To become familiar with the DryAir line of Hydronic heaters and accessories
3. Gain an understanding of a basic set-up
4. Q & A

KEY PERSONNEL

1. **BRAYDEN KIEFER | Service Manager**
   brayden@dryair.ca (306) 231-6841

2. **CODY ROTH | Senior Service Technician**
   croth@dryair.us (419) 467-9902

3. **Kurt Weibel** | VP, **Technical Hydronic Solutions**
   kurt@dryair.us (814) 360-1386

DRYAIR PRODUCT LINE

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DRYAIR'S PRODUCT CATEGORIES

1. Central Heating Units (CHUs)
2. Heat Center Pro (HCP)
3. Hydro Heat Pro (HHP)
4. GreenThaw Systems (GTS)
5. Heating Accessories
6. Dehumidification

CSA Certified — Canada + US

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CENTRAL HEATING UNITS (CHU)

Model 400 CHU = 354,960 Btu

Fuel Source: Tri-Fuel – Natural Gas, Propane or Diesel

Thaw = 6,000 sq ft

Cure = 14,000 sq ft

Temporary Space Heat = 11,000 sq ft

Dry Outs = Remove up to 240 gallons/day

Model 900 CHU = 896,000 Btu

Fuel Source: Tri-Fuel – Natural Gas, Propane or Diesel

Thaw = 16,000 sq ft

Cure = 36,000 sq ft

Temporary Space Heat = 27,000 sq ft

Dry Outs = Remove up to 640 gallons/day

CENTRAL HEATING UNITS (CHU)

Model 1200 CHU = 1,233,000 Btu

Fuel Source: Natural Gas or Propane

Thaw = 22,000 sq ft

Cure = 49,000 sq ft

Temporary Space Heat = 37,000 sq ft

Dry Outs = Remove up to 960 gallons/day

Model 1800 CHU = 1,792,000 Btu

Fuel Source: Tri-Fuel - Natural Gas, Propane or Diesel

Thaw = 32,000 sq ft

Cure = 72,000 sq ft

Temporary Space Heat = 54,000 sq ft

Dry Outs = Remove up to 1,280 gallons/day

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CENTRAL HEATING UNITS (CHU)

HESF 1000 Steam

Plate Heat Exchanger = 1,000,000 Btu

Fuel Source: Steam

Applications: Temporary Heating,
Ground Thaw & Concrete Cure

- Transfer's steam heat to glycol and pump's through up to 5 - 200,000 Btu heat exchangers
- No need for ventilation, unit can be placed inside the building next to the steam source

THE GREENTHAW™ SYSTEM (GTS)

200 GTS

212,800 Btu, 1,200’ of hose

Fuel Source: Diesel

Thaw = 1,800 sq ft (std) / 3,600 sq ft (additional hose)

Cure = 2,400 sq ft (std) / 8,400 sq ft (additional hose)

400 GTS

348,000 Btu, 3,000’ of hose

Fuel Source: Diesel

Thaw = 4,500 sq ft (std) / 6,000 sq ft (additional hose)

Cure = 6,000 sq ft (std) / 14,000 sq ft (additional hose)

THE GREENTHAW™ SYSTEM (GTS)

650 GTS

620,200 Btu 5,000’ of hose

Fuel Source: Diesel, Natural Gas or Propane

Thaw = 7,500 sq ft (std) / 11,250 sq ft (additional hose)

Cure = 10,000 sq ft (std) / 25,000 sq ft (additional hose)

900 GTS FLEX

896,000 Btu, 8,000’ of hose (2 reels)

Fuel Source: Diesel, Natural Gas or LP

Thaw = 12,000 sq ft (std) / 16,000 sq ft (additional hose)

Cure = 16,000 sq ft (std) / 36,000 sq ft (additional hose)

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900 HEAT CENTER PRO (HCP)

Fuel Source: Tri-Fuel – Natural Gas, Propane or Diesel

The 900,000 Btu Heat Center Pro (HCP) has room to store 4 - HE200 (200,000 Btu), or 9 - HE80 (80,000 Btu) thermostatically controlled, stainless steel heat exchangers inside the front of the trailer.The large, powered hose reel at the back of the HCP is capable of storing all of the hoses needed to circulate fluid to the exchangers.

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1800 HYDRO HEAT PRO (HHP)

- TRI-FUEL (PROPANE, NATURAL GAS, DIESEL)
- DUAL BURNER SYSTEM
- DUAL 900,000 BTU WATER HEATER
- DUAL 2M BTU PLATE HEAT EXCHANGERS
- GLYCOL BASED HEATING SYSTEM
- TRIPLE PUMP (1 INTERNAL GLYCOL SYSTEM, 1 POTABLE PLATE, 1 PROCESS PLATE)

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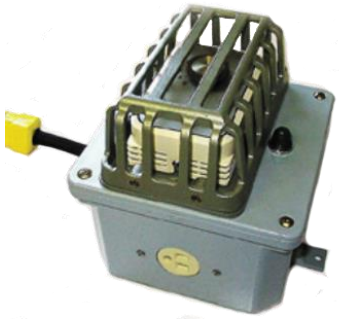
HEATING ACCESSORIES

Smart Thaw Flow Reverser

Fan Coils



Humidistat

Plate Heat Exchanger

Mixing Booster

Auxiliary Hose Reel

PRE-SET UP & LEGAL INFORMATION

1. Always follow local regulations and codes in regards to heating devices.

2. Natural Gas, Propane, and Electrical connections should always be performed by a licensed trades person.

3. Be familiar with all the Safety, Caution, and Danger decals on the machines.

4. Read and understand the operators manual and the included MSDS sheets for the heat transfer fluid.

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FUEL CHANGES

The units that can operate on different fuels can be converted usually in less then an hour with available quick change gas trains.

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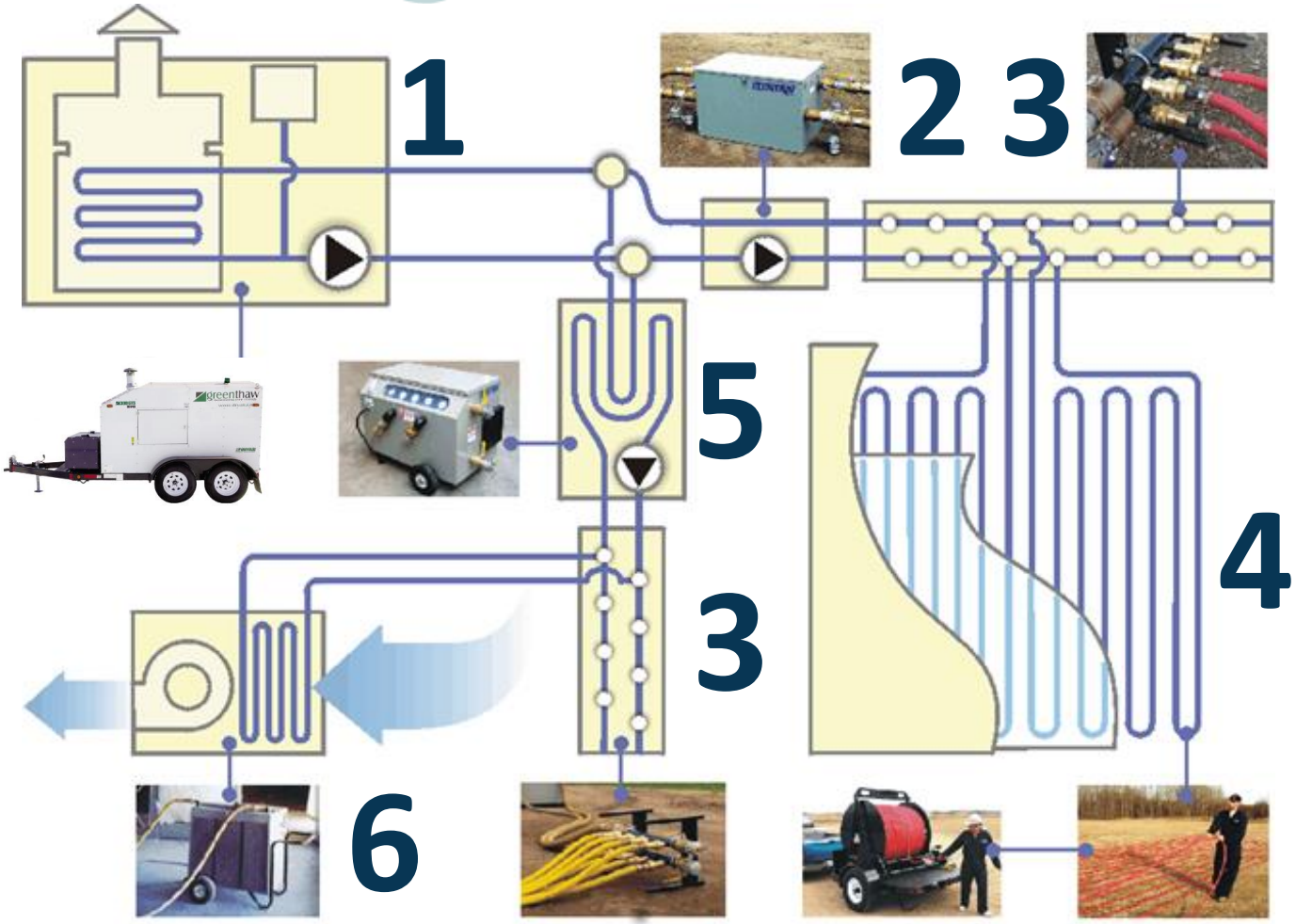
HOW IT WORKS



1. HEAT SOURCE
2. MIXING BOOSTER
3. REMOTE MANIFOLD
4. CIRCULATION LINE HEAT EXCHANGER
5. PLATE HEAT EXCHANGER
6. FAN COIL

SET-UP

Site Plan

- All hoses should be out of the way so as to not create a tripping hazard or not to get punctured by moving equipment.
- Pay attention to prevailing winds that may cause down drafting in the chimney of the heater.
- Pay attention to your fuel supply. Position the DryAir unit so that it can be as close as possible to the fuel supply.
- Any hose exposed to the outside weather should be wrapped or insulated to minimize heat loss to rain, snow, or colder temperatures.
- Ensure hoses are not laying in water. This will minimize heat loss.
- Avoid sharp corners when running hose that may cause a kinks and prevent the flow of glycol in the system.

SET-UP

Plan equipment to use

- Match your equipment with the accessories.
  Example: Heating a multi-story building may require the use of a remote reservoir.

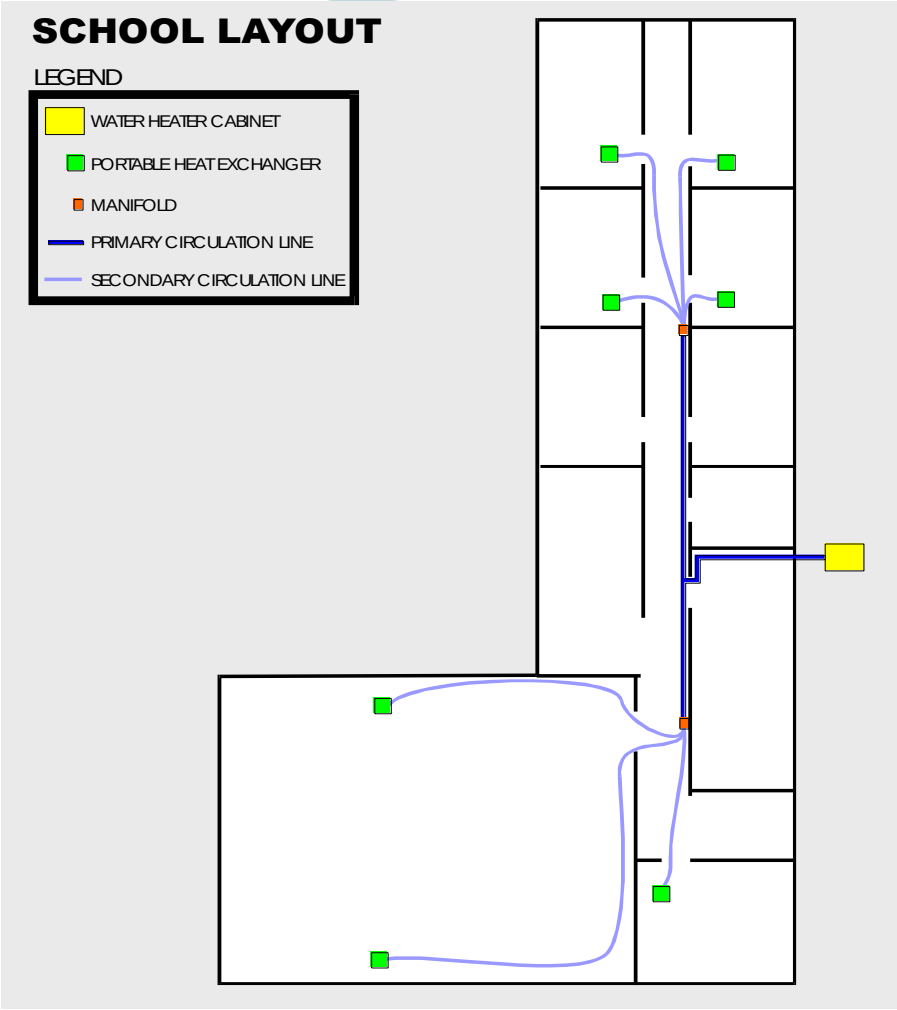
- CHU 400:
  2 - 200 Fan coils
  5 - 80 Fan coils

- CHU 900:
  4 - 200 Fan coils
  11 - 80 Fan coils
  1 – 600 Fan coil

- CHU 1200:
  6 - 200 Fan coils
  15 - 80 Fan coils
  2 – 600 Fan coils

- CHU 1800:
  9 - 200 Fan coils
  22 - 80 Fan coils
  3 – 600 Fan coils

SET-UP

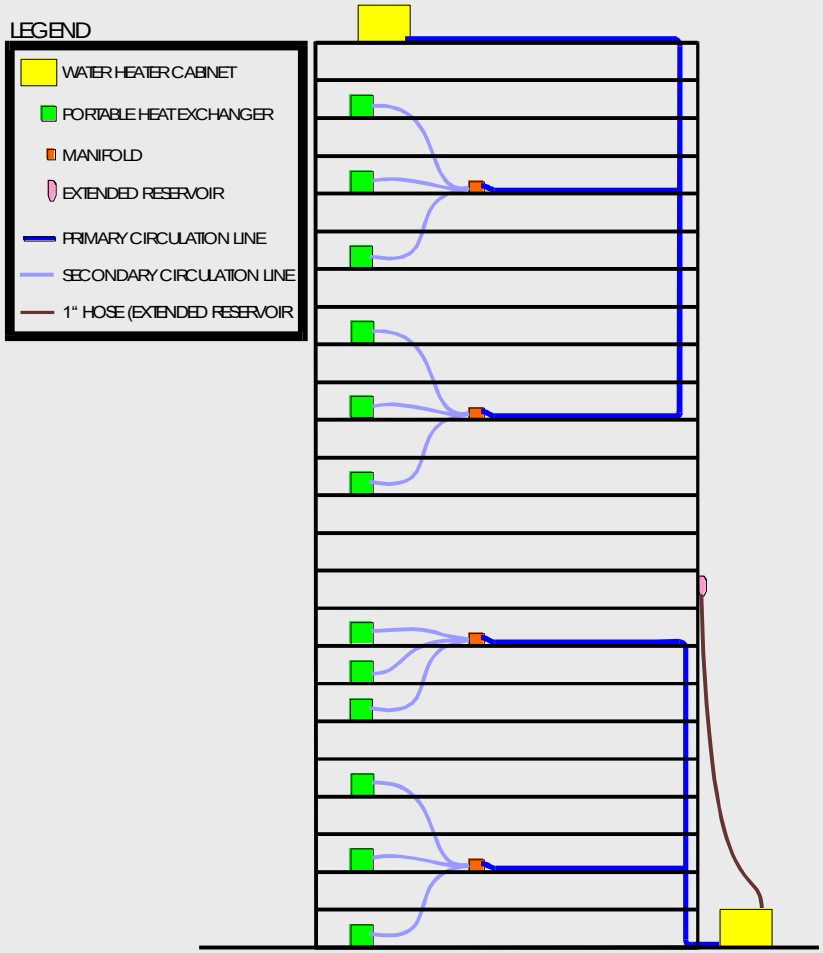


Example of a school layout. This layout has a DryAir unit, a two way primary line, and manifolds to secondary lines running to portable heat exchangers.

All secondary lines should be kept as close to the same length as possible.

SET-UP

HIGH RISE LAYOUT



Example of a high rise layout. This layout has 2 DryAir units, one on the ground level to supply heat to the lower floors. One on the roof to supply heat to the upper floors.

The ground level DryAir unit may need a reservoir extension to prevent any glycol spillage if the unit were to shut down.

One main line is used on each unit, and tee-d to another floor along the way.

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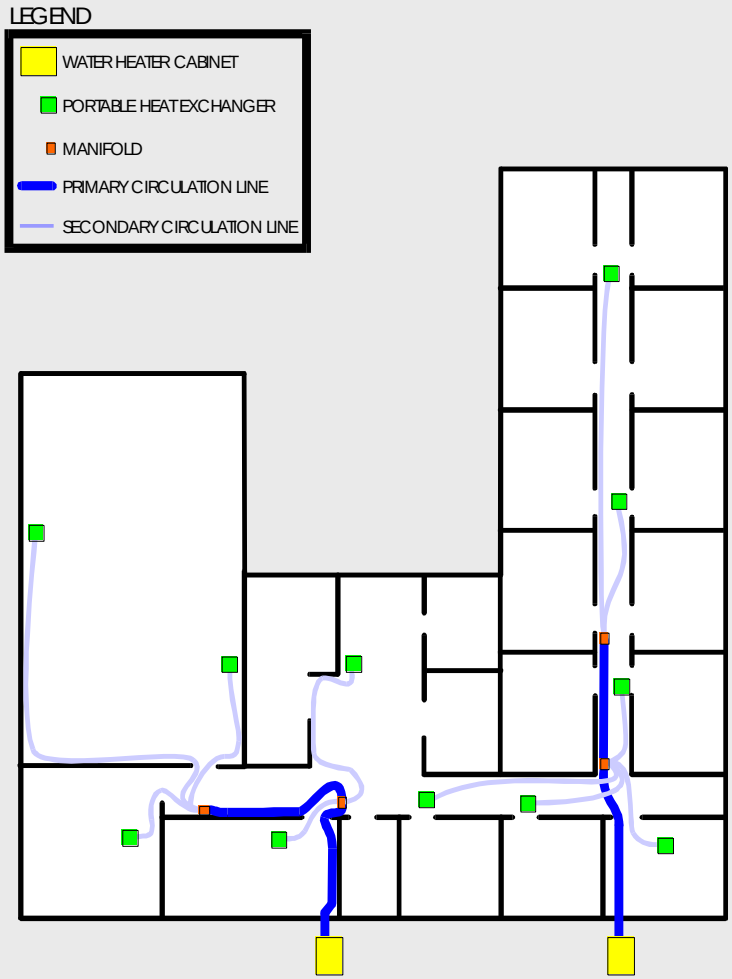
SET-UP

LARGE STRUCTURE LAYOUT



Example of a larger structure layout. This layout has 2 DryAir units, both on the ground level to supply heat to different areas of the building.

The DryAir units are separate systems. Primary lines in and secondary lines of similar length to each portable heat exchanger.

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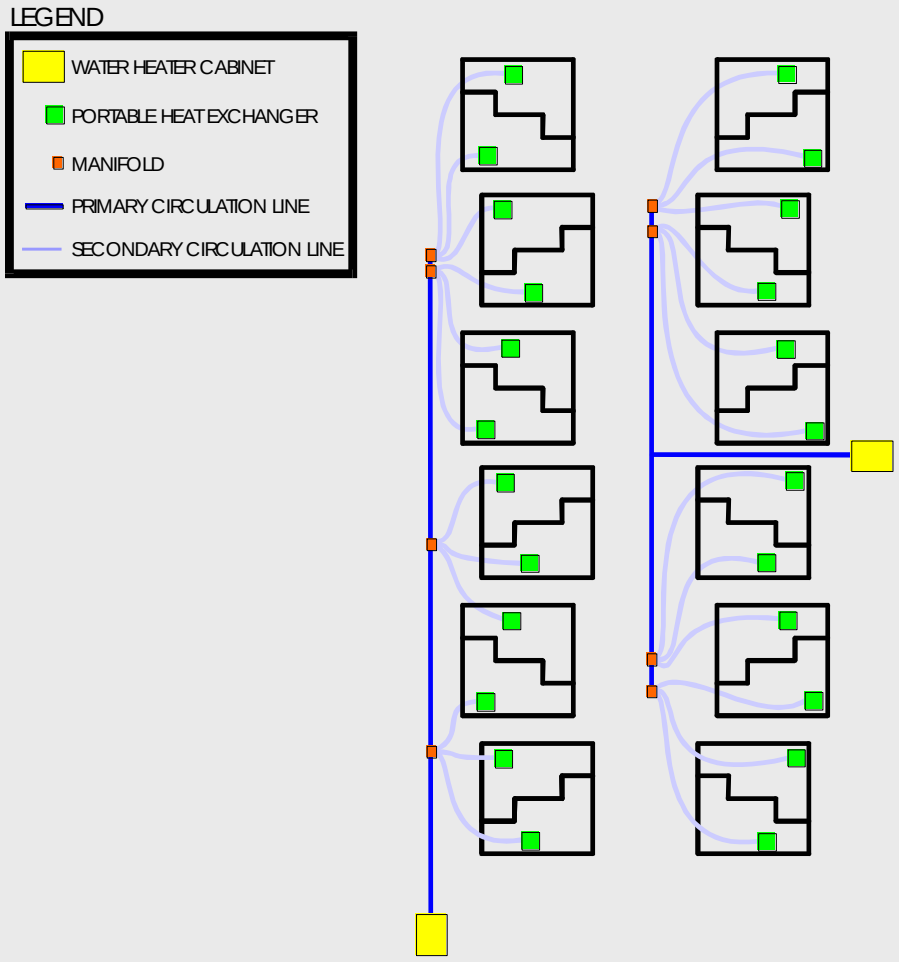
SET-UP

TOWN HOUSE LAYOUT



2 examples of a town house layout. With different unit placements.

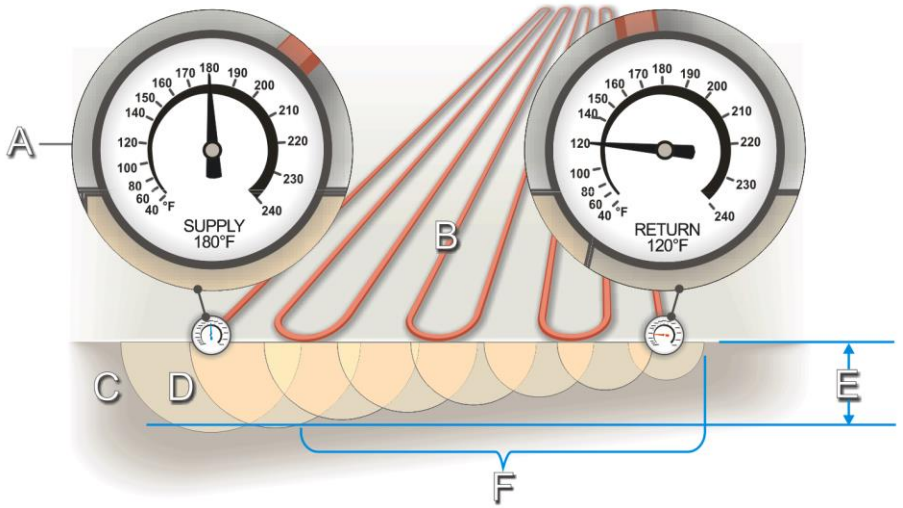
The left side layout is less than ideal, but can still be done if need be. The first few manifold and fan coils may get more of the heat from the glycol loop. The further coils may not be as hot as the closer ones.

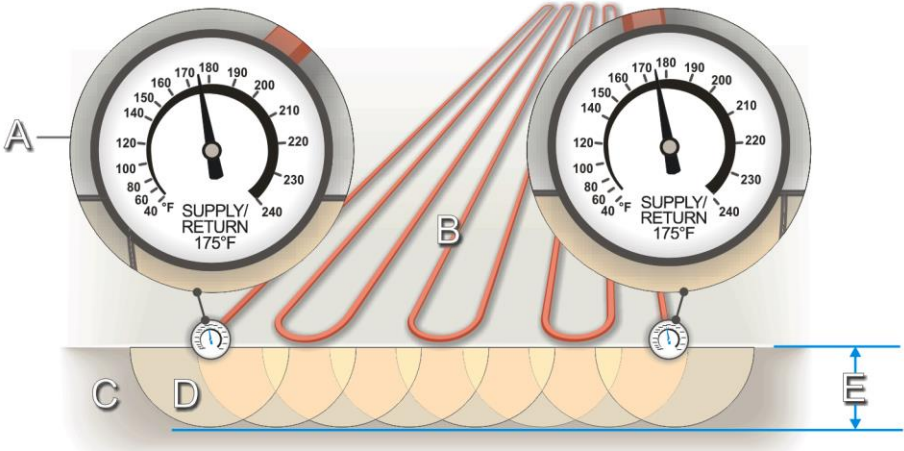
In the right side setup the manifolds are equal distances apart, so each will get the same amount of heat.

Even Thaw/Cure Pattern

FLOW REVERSER

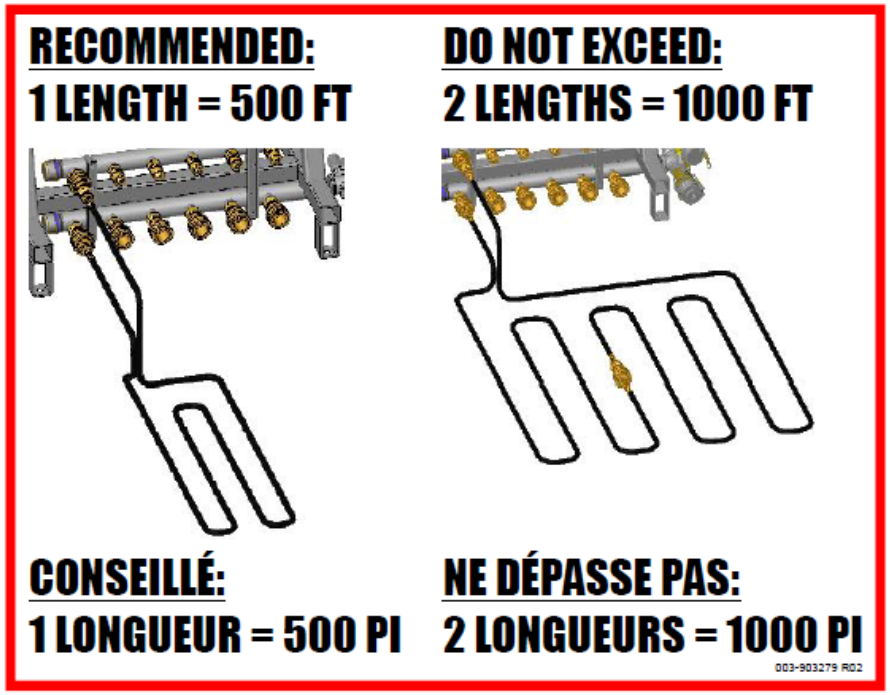
This device provides an even thaw / cure pattern throughout your ground thaw loops which in turn will speed up the thawing process, reduces costs and maximizes the units potential.





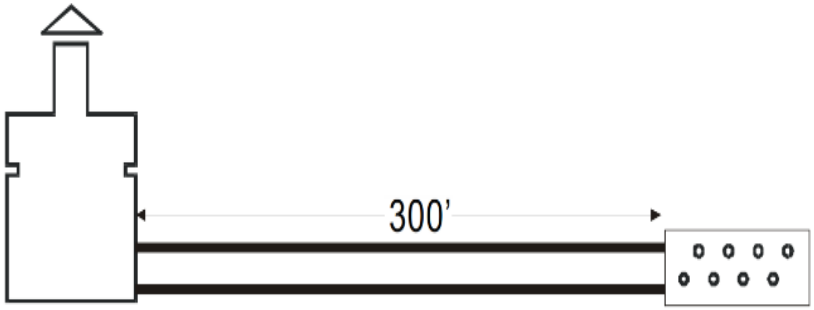
Ground Thaw/ Concrete Cure

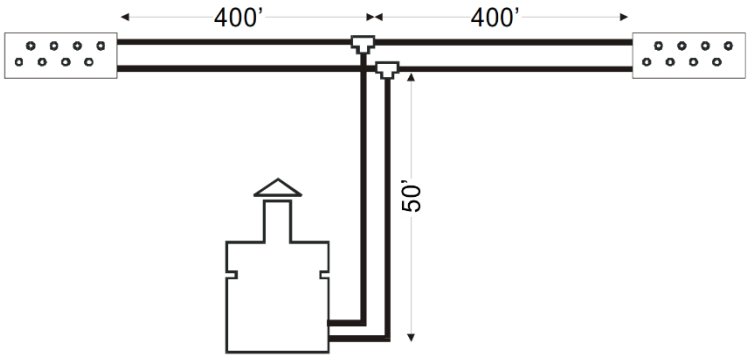
- 12” spacing between lines for ground thaw.
- 18”-24” spacing between lines for concrete curing.
- Cover ground thaw hoses to retain heat into the ground or concrete.
- Do not run hose through any water as it will take all heat from the line.
- Be sure of all connections and run unit to verify hot fluid runs well through the lines before covering.



Hose Length Guidelines

PRIMARY LINES

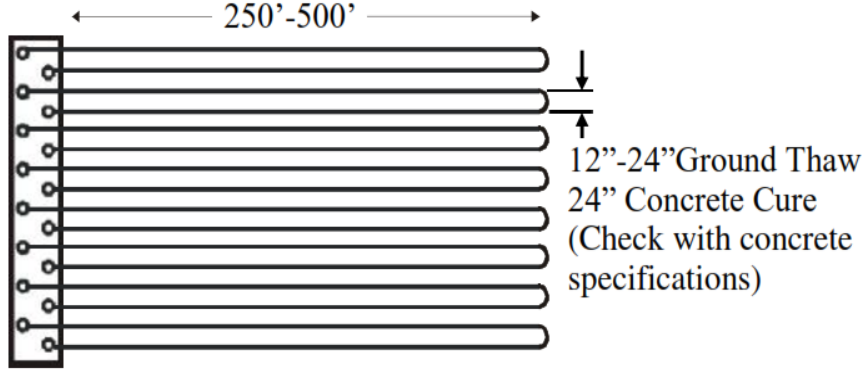


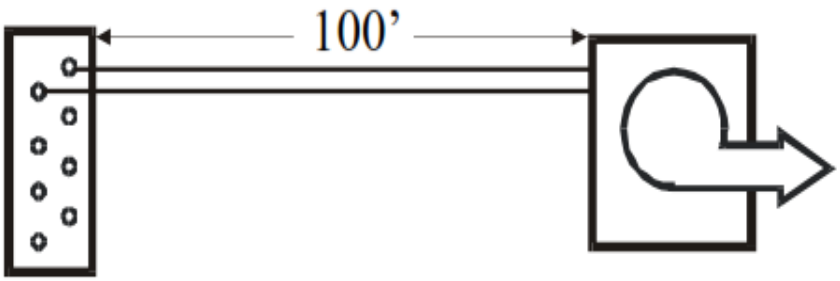


- These are guidelines and may not perform exactly like this in every scenario.
- The images are based on systems with 2” line, a 2HP pump, 72 GPM, and ideal conditions.
- These are flat ground scenarios, adding vertical lift may reduce horizontal pump capabilities.
- Recommend maximum vertical lift is 70’.

Hose Length Guidelines

SECONDARY LINES



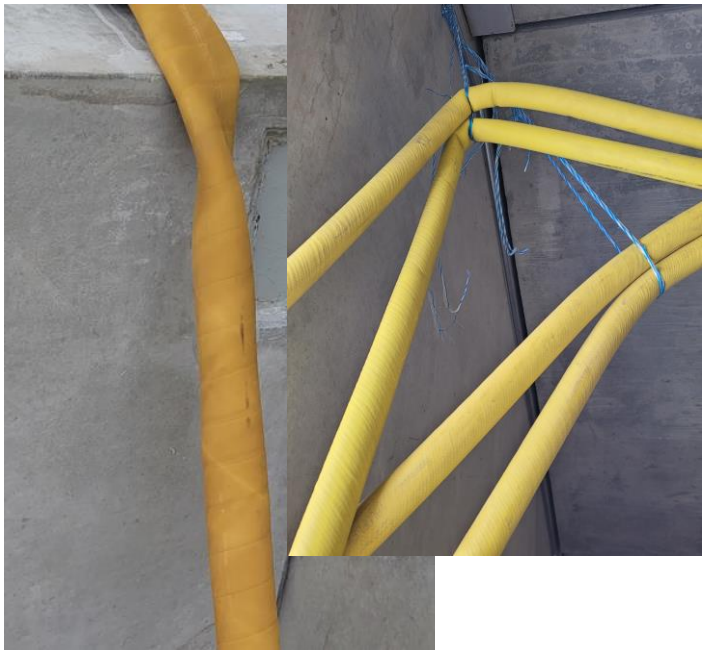


“Manifold” to “Portable Heat Exchanger”

- These are guidelines and may not perform exactly like this in every scenario.
- The second image is based on 1” line and a recommended 12 GPM flow to each portable heat exchanger in a system.

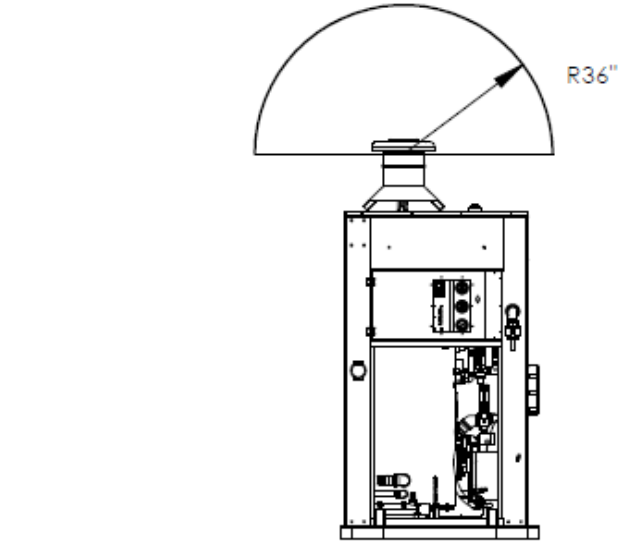
Hose Care

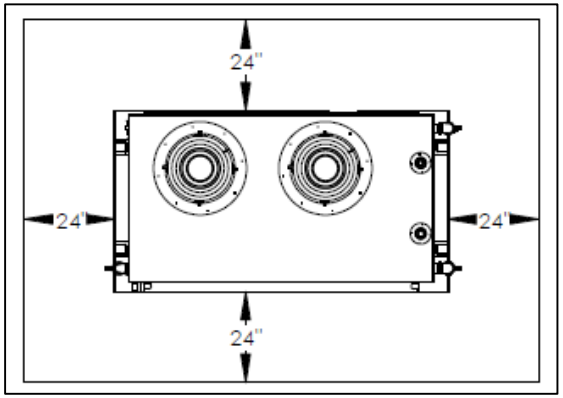
- Avoid sharp corners to prevent hose kinking
- Try to add support for the hose to bend around a corner smoothly to prevent collapse.



Unit Care

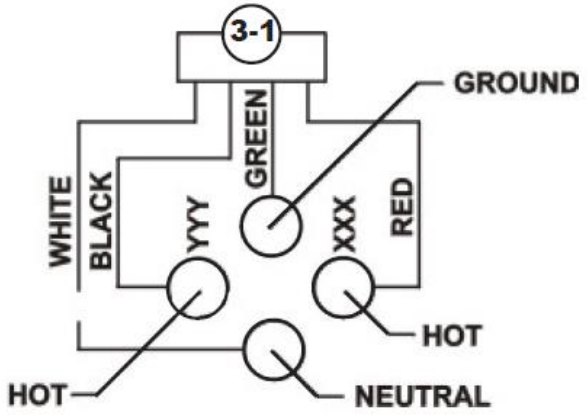
- Keep a 3’ radius unobstructed around the chimney of your unit.
- Keep a 2’ perimeter around your unit clear at all times.
- Do not place any "portable heat exchangers" or "circulation line heat exchangers" higher than the top level of the heat transfer fluid fill tank without using a reservoir extension kit. Fluid can overflow and drain back to system if pump is shut off.





Unit Care

- The module is factory wired so that the only connection to be made is a 230V AC service outlet.
- Only clean #1 or #2 diesel fuel or light heating oil is suitable for use in the system.
- A supply of “Propane Vapor” should be connected to the inlet of the secondary regulator at a pressure of 10 PSI MAX.
- A supply of “Natural Gas” should be connected to the manual gas train supply valve at a pressure of approximately 12-14” W.C.



Unit Care

Adding “HTF” to System

- Ensure all breakers are in the “On” position.
- Submerge a fill/drain hose into the bottom of a barrel/pail or jug of pre-mixed “HTF”
- Turn the supply ball valve to the “Closed” position.
- Turn the fill/drain ball valve to the “Open” position.
- Toggle the pump switch to the “On” (up) position .
- Once the pump switch is in the “On” position, the pump will commence to draw the “HTF” into the system. While watching the glycol level gauge, continue to fill the system until the glycol level gauge shows ½ full.

Unit Care

In the case of overfull situations, do the following:

- Attach a drain hose to the drain valve.
- Insert drain hose into a barrel, pail, or jug with sufficient room for the “HTF”.
- Open drain valve to release “HTF”.
- Once the desired amount of “HTF” has been attained and the glycol level gauge is showing ½ full, turn the drain ball valve to the “Closed” position and continue with the following procedures.

Factory Information

DryAir Manufacturing Corp.
400 Service Road,
St. Brieux, SK, Canada, S0K 3V0
Tel: (306)-275-4848
Toll Free: 1-888-750-1700
Fax: (306) 275-4664
Website: www.dryair.ca

Questions?

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Tel: 306-275-4848 Toll Free: 1-888-750-1700

@DryAir Manufacturing Corp. | WWW.DRYAIR.CA