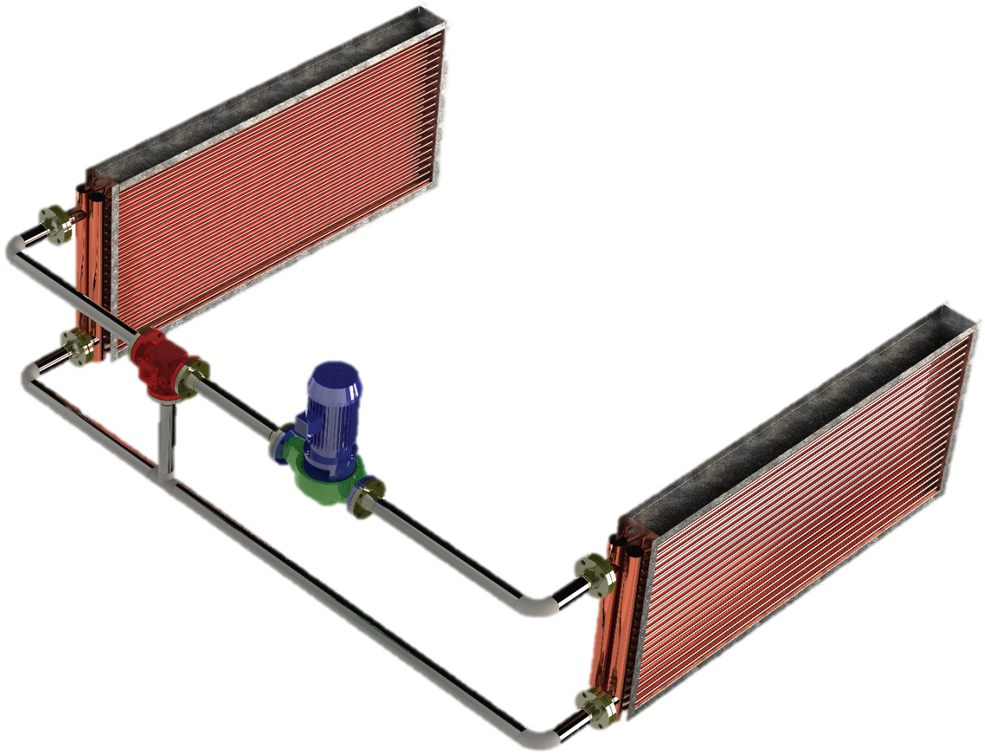
GLYCOL RUN AROUND SYSTEMS



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GLYCOL RUN AROUND SYSTEMS

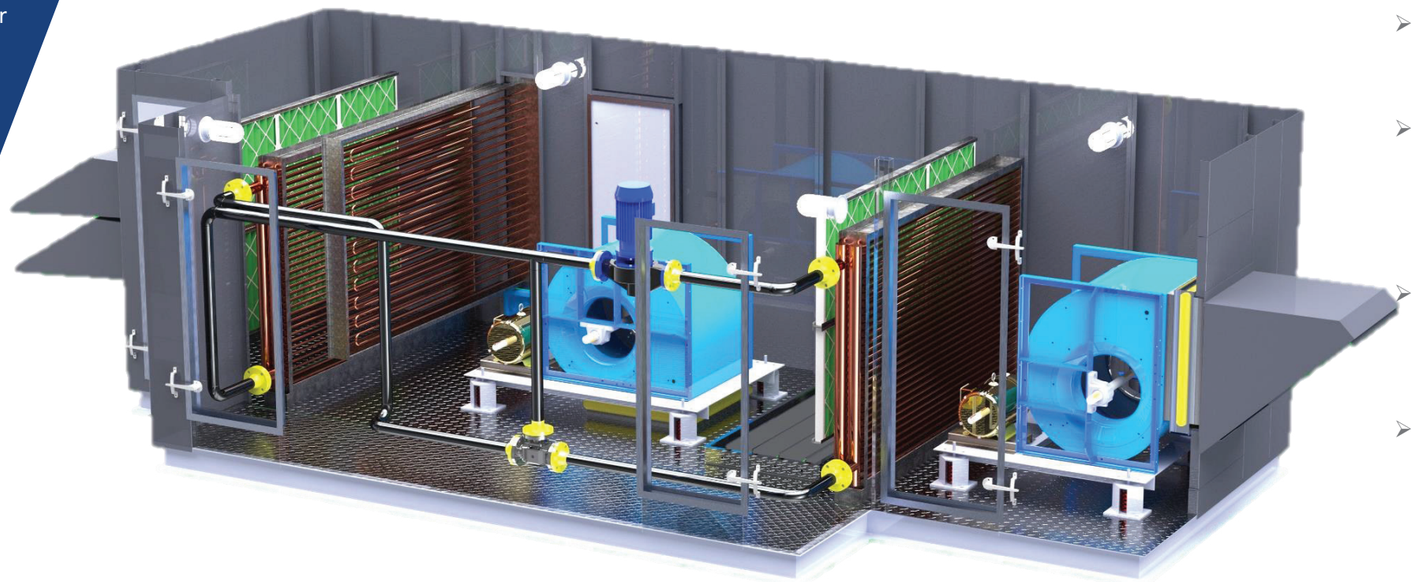
DESCRIPTION

Glycol run around systems consist of finned-tube coils placed in the supply and exhaust air streams connected in a closed loop where glycol (or alternative heat transfer fluid) is circulated.

Glycol run around systems can be incorporated into air handler designs using any medium for the primary source of heat including:

- Indirect fired natural gas heaters
- Direct fired natural gas heaters
- Hydronic heating coils
- Steam heating coils
- Electric heat

CERTIFIED ISO 9001:2015



TYPICAL APPLICATIONS

Southampton Industrial glycol run around systems can be used in the following applications:

- Hospitals, labs, or other commercial and industrial applications that have high exhaust and ventilation rates
- Installations where no cross contamination between the supply and exhaust air streams is permitted. Glycol run around systems utilize two separate air streams to ensure that exhaust air does not contact the fresh air being supplied into the building
- In buildings where the exhaust air temperatures fall in the range of 80°F to 200°F. Exhaust air temperatures below 80°F result in low effectiveness and limited energy savings
- Air handlers with glycol run around systems can be customized to meet project specific requirements and can be combined with Southampton control panels in completely integrated HVAC/automation systems

OPERATION

Figure 1 shows a glycol run around loop schematic. The system contains a pump, expansion tank and three-way valve. A pump circulates the heat transfer fluid through a closed loop which includes two finned tube coils, one located in the supply air stream which rejects heat, the other in the exhaust air stream which absorbs heat. The expansion tank allows for the contraction and expansion of the heat transfer fluid and helps minimize oxidation. To prevent the exhaust coil from frosting, a three way valve controls the temperature of the fluid entering the exhaust air coil by recirculating some of the warmer fluid and bypassing the outdoor air coil.

$$\eta T = (T2-T1) / (T3-T1) \times 100\%$$

where, ηT: sensible effectiveness
T1: temperature of outside air
T2: temperature of supply air
T3: temperature of return air

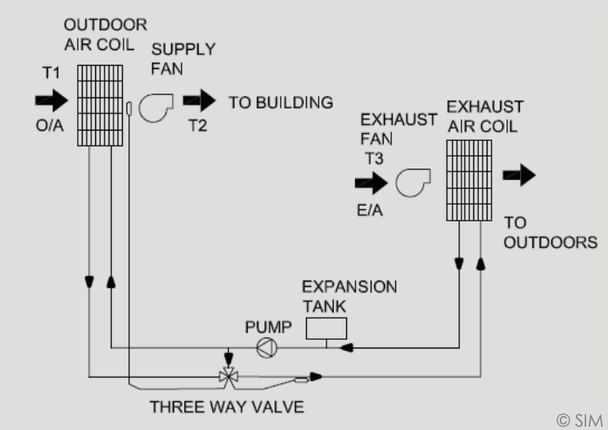


FIGURE 1