

Non-Refrigerated Heat Exchange Systems

FK Series Liquid to Air Heat Exchange

Tek-Temp Instruments, new FK Series recirculating heat exchangers remove heat from process liquids directly to the ambient air by means of a radiator and fan. Ideal application conditions are when the desired circulating temperature is significantly higher than the ambient air temperature, and/or when the heat load is relatively small. Cooling capacity is dependent on the process liquid flow rate, and the difference between the circulating and ambient temperatures. Positive displacement and centrifugal-type circulating pumps are available and are rated for continuous operation.



Applications

- Steam Sampling
- ICP
- Low Stability Cooling

°F can be calculated if the load and the flow rate are known:

$$T\{\text{water in}\} - \{\text{water out}\} = \{\text{load in BTU/hr divided by } \{500 \bullet \text{flow rate in GPM}\}\}.$$

MODEL FK-1 PERFORMANCE			
Heat Removal	700 BTU/HR	2100 BTU/HR	3500 BTU/HR
Performance with Flow=1 gpm	Tout=Tair+15°F	Tout=Tair+45°F	Tout=Tair+75°F
Performance with Flow=2 gpm	Tout=Tair+17°F	Tout=Tair+50°F	Tout=Tair+85°F

MODEL FK-2 PERFORMANCE			
Heat Removal	2000 BTU/HR	6000 BTU/HR	9900 BTU/HR
Performance with Flow=1 gpm	Tout=Tair+14°F	Tout=Tair+42°F	Tout=Tair+70°F
Performance with Flow=2 gpm	Tout=Tair+16°F	Tout=Tair+47°F	Tout=Tair+79°F

MODEL FK-3 PERFORMANCE			
Heat Removal	5000 BTU/HR	10,000 BTU/HR	14,000 BTU/HR
Performance with Flow=2.5 gpm	Tout=Tair+30°F	Tout=Tair+50°F	Tout=Tair+70°F

Dimensions (with feet)	17.6" wide x 15" high x 17.1" deep
Power Requirements	115 volts, 60 hz, 4 amps

Non-Refrigerated Heat Exchange Systems

Model NRD-550 Liquid-to-Liquid Heat Exchange Systems

The NRD-550 Series models are non-refrigerated heat exchange systems which utilize a tap or building water source to remove heat from your process. They are particularly useful in situations where the cooling water source temperature is too low, or where the pressure and cleanliness of the water may cause damage to the equipment or compromise performance. An internal plate-type heat exchanger is used to remove heat efficiently while isolating the cooling and process loops. Large quantities of heat can be removed in a small physical size as compared to refrigerated models. Our modular frames are used to package these systems in order to ensure the smallest possible footprint.



NRD-550 systems are equipped with digital temperature display, a coolant pressure gauge, a liquid level switch, and a flow/pressure adjustment valve. Heat removal capacities are dependent on the cooling water flow rate and on the process water flow rate. A variety of circulating pumps are available to match process requirements. Our engineers are happy to assist in selecting the proper circulating pump and heat exchange system.

Available Options: All stainless steel and polymeric wetted parts, flow meter, pressure relief valve, flow switch, dual level alarm.

Applications

- Analytical Equipment
- Medical
- Diffusion Pumps
- Plasma Systems
- Sputtering Systems
- Power Supplies
- Welders

Specifications

Specifications for:	NRD550/S1	NRD550/S2	NRD550/S3	NRD550/S4
Cooling Capacity (BTU/hr) @ 20°C	See Performance Charts Below			
Temp. Control Range	5 to 38°C			
Stability	± 0.5°C			
Reservoir Volume (gallons)	2.5		8.0	
Recirculating Capacity (see Pump Curves)	T1	R3, T2C	C150, T2B, T2D	CB500
Power Requirements (Volts, Ø, Hz)	115, 1, 60	115, 1, 60	115, 1, 60	208, 3, 60
Dimensions W x H x D (inches)	19-5/8 x 33 x 24-5/8		22-3/8 x 36 x 27-5/8	36-1/2 x 38-5/8 x 28
Available Options	Coolant filter, Flow adjustment valve, Flow meter, Flow switch, Pressure relief valve, All stainless steel and polymeric wetted parts, Temperature alarm			

Non-Refrigerated Heat Exchange Systems

NRH-450 Heat-Only Systems

For applications that require low to high heating capacity at above-ambient temperatures, we offer the NRH-450 Series of heat-only systems. All NRH-450 units feature a stainless steel reservoir, stainless steel heaters and a high-temperature circulating pump design. Digital indication of outlet temperature is provided, and PID temperature control is available to provide high stability for delicate processes. Overtemperature and low liquid level switches protect system components and your process equipment. Our engineers will be happy to assist you in selecting the right capacity and option package for your recirculating heater application.

