Gas
Liquid & Slurry
Solid & Powder
Steam & Water

SENTRY CWIS COOLING WATER SKIDS

Cooling Water Skids

SAMPLE CONDITIONING

Poor quality plant service water and temperature variation can cause major problems with sample cooling. Plant service water chemical and physical purity, pressure and temperature are of particular importance for proper sample cooling. If the water contains any hardness, exposure to high temperatures in the sample coolers can result in scaling and a loss of cooling efficiency. Chemical contaminants such as chlorides can cause stress corrosion cracking of stainless steel at elevated temperatures. Undissolved material in the water (e.g. silt, organic matter and corrosion products) can plug the sample cooler minimizing heat transfer capacity. The flow of cooling water may be insufficient due to low source pressure or excess pressure drop in the supply piping. Seasonal temperature variation of plant service water also affects sample temperature stability and analyzer readings. A Sentry® CWIS cooling water isolation skid can solve these issues.

MODELS

CWIS-35 | CWIS-80 | CWIS-140

BENEFITS

Heat from the sample cooler is removed by a loop of clean recirculating water, eliminating scaling and fouling of the sample coolers. This loop is cooled by the plant service water via a plate and frame heat exchanger. The plate exchanger provides a protective barrier between the plant service water and the sample coolers. The plant service water is not exposed to the high temperature of the sample cooler (preventing scaling in the plate exchanger), and if silt or organic matter fouls the plate exchanger, it easiy can be cleaned. Also, the pump provides adequate head pressure in the clean loop, which ensures cooling water supply to the sample coolers.

The temperature of the clean recirculating water loop is held constant. A diverter valve allows some of the warm flow of the clean loop to bypass the plate exchanger and later mix with the cooled flow to maintain an adjustable preset temperature. Constant clean loop temperature greatly enhances analyzer accuracy by eliminating excursions of the sample temperature. This also allows flow on the plant service water loop to be maintained at a high level to minimize fouling.

FEATURES

- Eliminates sample cooler fouling
- Isolates chemicals and dissolved and suspended particles in plant service water
- Maintains constant sample temperature

OPTIONS

- Dual pumps, manual control, automatic switchover on loss of flow
- Dual heat exchangers allow cleaning of fouled heat exchangers without interruption of recirculating water
- Close temperature control within ±1°F (0.5°C)
- Oversized heat exchangers for high heat rejection rates or severe fouling service
- Titanium heat exchanger plates for brackish or corrosive water service

DASTEC S.R.L.
Representantes / Distribuidores Exclusivos
Buenos Aires, Argentina
Tel.: (54 - 11) 5352-2500
Email: info@dastecsrl.com.ar
Web: www.dastecsrl.com.ar

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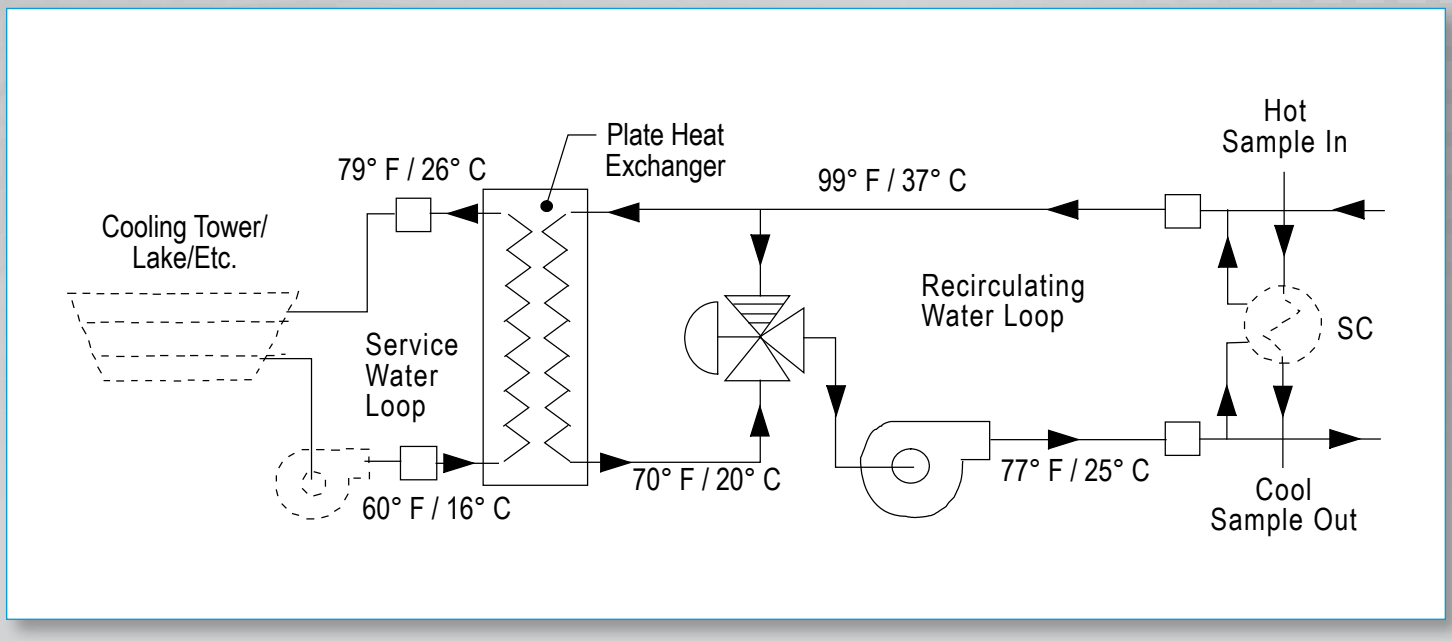

SPECIFICATIONS

model	CWIS-35	CWIS-80	CWIS-140
materials	Plate and frame 316 SS		
heat exchanger isolation valves	Standard on recirculating side of the heat exchanger to allow cleaning with minimum loss of recirculating water and to minimize air ingress into the recirculating system		
heat exchanger vent and drain fittings	Provided for both sides of the heat exchanger		
recirculating water pump	Centrifugal pump with close-coupled, three-phase TEFC motor.; pumps are provided with inlet and outlet isolation valves and unions/flanges to facilitate pump maintenance		
expansion tank	Bladder type tank equipped with relief valve		
temperature control	Standard units have a self-controlled three-way mixing/regulating valve capable of control within ±4° F (2° C)		
makeup water connection	Integral pressure-regulating valve for inlet pressures up to 125 psig (8.6 barg)		
electrical	480 volt, three-phase, 60 Hz input power; NEMA 12 enclosure with disconnect; indicating light for 'Power On,' 'Pump On,' 'Pump Off' and 'Loss of Flow'		
instrumentation	Discharge pressure gauge and recirculating water outlet temperature indication		
recirculating flow gpm (lpm)[1]	35 (132)	80 (303)	140 (530)
heat rejection BTU/hour (KW)[2]	500,000 (146)	1,000,000 (292)	1,800,000 (527
power KVA[3]	1.3	3.6	5.8
connection sizes			
recirculating water	1-1/2 in. FNPT	2 in. FNPT	2-1/2 in. FNPT
service water	1-1/2 in. FNPT	2 in. FNPT	3 in. 150 lb. flange
makeup water	1/2-in. FNPT	1/2 in. FNPT	1/2 in. FNPT

[1] Recirculating flow rates are based upon an external pressure drop of 20 psig (1.4 barg)
[2] Heat rejection capacities based on service water flow of 150% of the recirculating flow and 10° F temperature approach
[3] The KVA rating is for a single pump

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966 Blue Ribbon Circle North, Oconomowoc, WI 53066 U.S.A. | +1-262-567-7256 | sales@sentry-equip.com

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