Typical HiCycler Set-Up

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HiCycler®

Green Technology

Water Conservation Process
Designed Specifically for Cooling Towers

The HiCycler® Process is an organic side stream water conditioning method that reduces blowdown by 95% or more. This unique chemical program was developed for the purpose of water conservation. The HiCycler® Process has numerous advantages over water softening including less water wasted and a simpler, less corrosive operating system.

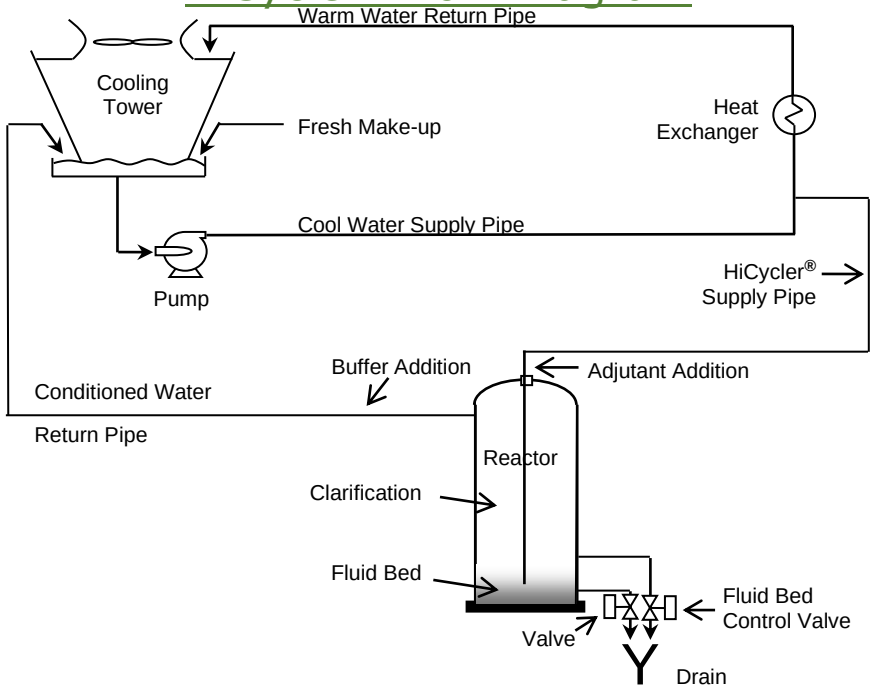
The HiCycler® Process uses a fluid bed reaction, new monitoring technologies and innovative water treatment chemicals. A percent of the hardness and silica is collected in the fluid bed where it is removed in the blowdown or collected in a filter chamber. Clear water from the top of the reactor is returned to the cooling tower for reuse.

HiCycler® does not use lime or a resin and is not a true softening system. The primary difference between softeners and the HiCycler® Process is that there is no backwash or regeneration. The hardness complexes are more soluble in warm water than in cool water. The HiCycler® process removes 0.5 to 2 pounds of hardness per gallon of blowdown. The blowdown water contains 30% to 55% hardness in a fluid mixture.

The innovative HiCycler® Process provides greater latitude in operating parameters creating major savings of both water usage and operating costs. The result is an efficient cooling tower water treatment system that reduces operating costs.

HiCycler is a registered Trademark.

HiCycler® Flow Diagram



HiCycler® Water Conditioning Chemicals Data

HiCycler® uses a two (2) solution chemical reaction with a fluid bed reactor to remove hardness from cooling tower water systems. Hardness ions are concentrated into a high-solids, fluid material that is easy to dispose of in the blowdown.

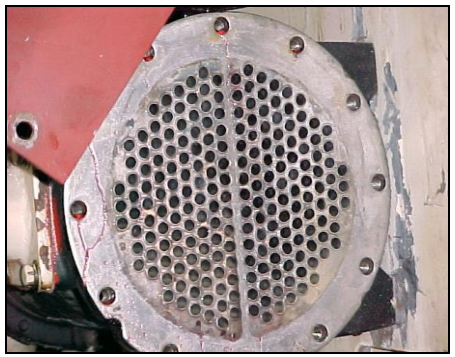
- Excellent corrosion protection
- Over 95% of blowdown is eliminated
- Exceptional water savings
- Forgiving operating characteristics

HiCycler® treated cooling water systems operate at a pH of 8.5-9.5. Drift loss is a significant part of the system blowdown. Total hardness in the cooling water is maintained between 400 and 1,000 ppm.

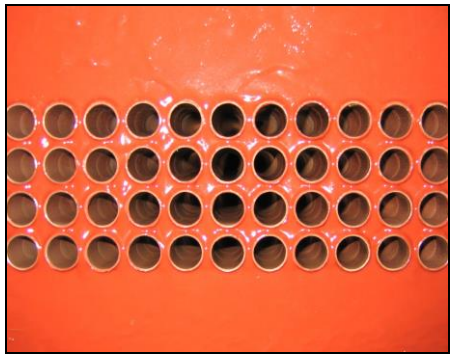
S P E C I F I C A T I O N S

	C-845	C-875	Fluid Bed
FUNCTION:	Conditioner Blend	Buffer Blend	Solids Removed
pH:	12.0	0.1-0.2	9.0 – 9.2
FORM:	Liquid	Liquid	Liquid
COLOR:	Clear to Hazy	Lt. Green	Milky
LBS/GAL:	12.0	10.43	11.0 – 12.0
SPECIFIC GRAVITY:	1.438	1.25	1.2 – 1.4

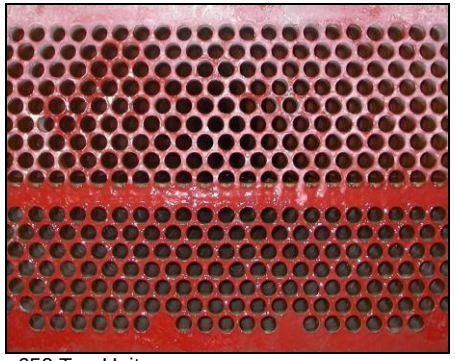
The quantity of each chemical used is determined by the make-up water hardness and the flow rate through the reactor. The amount of blowdown is determined by the fluid bed growth rate and the desired solids concentration in the wastewater. Blowdown solids content will be up to 65% solids by weight.



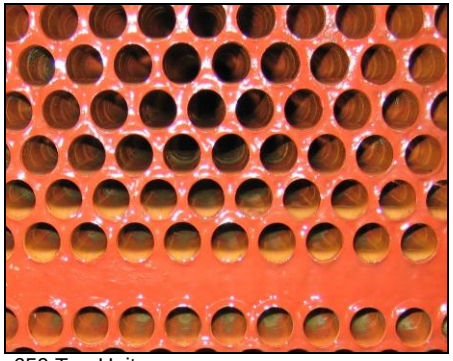
Emergency Power Unit Oil Cooler
No maintenance needed in 4 years



450 Ton Unit
4 years 3-5% blowdown



650 Ton Unit
3 months at 3-5% blowdown



650 Ton Unit
4 years at 3-5% Blowdown

Tower Basin
Water may turn yellow, no heavy metals

Tower Fill
White material does not stick

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