HEAT TRANSFER DIVISION:

UNIT 2: AIR COOLED FLUID COOLER DIVISION

Adhiam manufacture the below in the Heat Transfer Divisions

- **Plate Heat Exchanger**
- **Air cooled Fluid cooler**
- **Shell and Tube Heat Exchanger- SS and Exotic metals**

Adhiam closed loop cooling systems are designed to save money and energy cost while providing your process with reliable cooling systems. As this is closed loop cooling systems, the utility cost is saved and contaminants from open system is avoided.

DRY COOLERS:

Adhiam dry coolers provide a smart way to take advantage of free cooling when the surrounding temperature allows for it. They're made with cross-fin copper tubes and advanced corrugated aluminum fins, resulting in a combination of compact dimensions and high capacity..

In order for dry coolers to work, the air temperature needs to be cooler than the water in the system. To cool the system liquid, hot process liquid flows through the dry cooler tubes. This liquid is then cooled by the relatively cold ambient air that is forced through the **coil**.
The 'heart' of our air heat exchangers is the finned coil, built from a circuit of interconnected tube serpentines and fins to increase the heat exchanging surface.

Benefits:

- Low Energy cost
- Eliminates high treatment and sewage cost
- Eliminates scaling and corrosion
- Easy indoor and outdoor installation
- Potential to reclaim waste energy
- Our finned coil technology increases air to fluid contact by as much as 40% vs. traditional fin technology
- Energy efficient
- Reliable performance
- Heavy duty design with high corrosion resistance

- Favorable capacity/footprint ratio
- Available with easy to clean industrial fins
- Excellent sound characteristics
- Easy to transport, install and maintain

Features:

- **Coil** - an innovative coil design provides excellent heat transfer
- **Casing** - made with corrosion resistant galvanized steel with high rigidity for protection against vibration and thermal expansion
- **Fan motors** - available in three fan diameters - 31.5", 36", 39.5" - 60 and 50 HZ from 380 to 480 V
- **Design pressure** - each heat exchanger is leak tested with dry air.

DRY AIR COOLED FLUID COOLER, 4 FAN (72” Ø MULTI WING) MODEL: ACFC 180-4R

MODEL: ACFC 200 -4R
DRY AIR COOLED FLUID COOLER, 14 FAN (36” Ø MULTI WING)

MODEL: ACFC 280-4R

ADIABETIC AIR COOLED FLUID COOLER

MODEL: AIR COOLED FLUID COOLER- TRANSFORMENT OIL

OUR MODEL : ACTOC-50

Special Reasons of ACFC

1.	Water Consumption in Air-cooled Fluid coolers system	"Nil" with **Adhiam** Air –Cooled system after its first charge of water/fluid there is hardly any necessity. The same water /fluid is being circulated in the closed circuit system and is not exposed to the atmosphere for any loss of evaporation. **Temperature below freezing will require anti-freeze/glycol**
2.	Range & type of Air-cooled Fluid coolers	**Adhiam** - Air-cooled Fluid Coolers (ACFC) are available in 2 different types of series with unlimited combinations. The heat-transfer coils (Fin-Spacing, Row–deep, Face-area, Air-velocity, Motor-power etc.)Are selected on the basis of operating of cooling systems.
3.	Cost of Water softening Plant	Water softening system is not required once the portable drinking water is filled in the fluid coolers there is no water consumption at all. This kind of water is almost easily available everywhere.
4.	Dirt/Dust over Air-cooled system	Dirt/dust may accumulate at finned surface heat transfer coils in bad weather conditions during storm of dust in the air. Periodically dirt /dust can be washed with water pressure hose like washing a car radiator, or it can be cleaned with high pressure air if available.
5.	Scale formation in Air-cooled System	"Nil" as the water filled in the system is already clean. This water being circulated again and again, without any evaporation, therefore system is scale-free and there is no need for cleaning of tubes at all.
		Adhiam -Air-cooled fluid coolers selected at highest summer

6.	No De-ration of Cooling system	ambient temperatures therefore there is no fear of any de-ration. Through our Air-cooled system full capacity of plant can be utilized at peak load conditions.
7.	Saving Electricity during mild weather	Fan motors of air-cooled fluid coolers will save substantial amount of electricity, during winter season, cool nights and mild weather conditions. These fan motors can be connected for automatic operation with water-line-thermostat.to switch on/off for saving of electricity
8.	Maintenance cost very negligible	**Adhiam** -ACFC-Air-cooled process-Fluid Coolers require very little maintenance except yearly routine inspection of electric fan motors, If dirt accumulates at finned surface heat transfer coils in bad weather conditions it can be very easily cleaned as mentioned above.

Applications:

- **ACFC -**Process Water-cooling
- **ACFC -**Lube Oil Coolers – Gas-turbines
- **ACFC -**Fluid Coolers – Power-Plants
- **ACFC -**Industrial, Steel, smelter plant
- **ACFC-** Air Compressor cooling
- **ACFC-** Furnace Equipment cooling

- **Adhiam –** Any kind of fluids-with its Air-cooled (Dry Coolers)-systems cooling, oil or any liquids .Material selection can be as per the fluid and its environment.

- **Adhiam –** Design . Engineering ,development with experienced manpower with more than 25 years in the same field.

- **Adhiam –** Adiabatic – Air –cooled fluid coolers can cool water/other fluids close to wet bulb far less than dry bulb temperature.

  ACFC can be used where water is cooled to 35 deg.C with ambient temperature of 45 deg.C .

SPECIAL BENEFIT:

1. Quickest Delivery: We have the fastest delivery period of our coils, because we adopt our manufacturing program to produce our coils in the shortest possible period. In some urgent cases we have one-week delivery period.

2. Range of Hi-efficiency Coils: We use machines which produce Sine wave plate aluminium and copper fins from 3 to 12 FPI and one to 16 row deep. Coils are available from smallest size to largest size from 1.0 to 200 sq. ft coil face area.

3. Replacement old inefficient Coils: We do offer replacement coils for the existing system as one to one replacement.

4. Coils for New Projects: We can customise the requirements of coils for the new projects .

5. Energy-efficient Coils: **Adhiam** Coils save substantial amount of energy through precise selection of coils. It may be because of fin spacing (FPI), row deep, circuits or coil face velocity, the ultimate aim is to save energy and to achieve the best performance under given conditions.

6. Selection of Coils: Coils are selected with by experienced design engineers who use HTRI design package for design and ensuring peak performance.

7. Quality Coils in India: Our coils are available with international standard of manufacturing and all materials pass through rigorous check before use.

8. Proven Performance & Reliability: ACFC supplied for transmission company is performing well and offer good temperature difference even in hot and humid summer.

Adhiam – manufacturer of Heat Transfer (Cooling – Heating – Condensing – Evaporator) - Coils

Coils may be for New Project or for Replacement or Retro-fitment. We can select the material specification as per the applications. The below is typical materials .

- Coil Material - Specifications
- Tube Material - Copper – SS – Aluminium
- Fin Material - Processing equipment
- Casing Material - Galvanized Steel - SS
- Tube Expansion - Mechanical
- Testing - Pneumatic Pressure
- Special Coating - for Corrosion resistance