



- ★ REFRIGERATED TYPE AIR DRYERS
- ★ HEATLESS TYPE AIR DRYERS
- ★ COMPRESSED AIR RECEIVER TANKS
- ★ HEAT EXCHANGERS

- ★ AIR FILTER
- ★ WATER CHILLER
- ★ AUTOMATIC DRAIN

REFRIGERATED TYPE AIR DRYERS :-

The basic principal of operation of the Refrigerated Air Dryer is the removal of moisture by cooling air to certain preset temperature.

The air entering the system enters into the precooler. A Precooler is a heat exchanger where the incoming hot air is being cooled by the outgoing cold air so as to reduce the heat load for the evaporator and thereby the refrigeration system.

When the air is cooled, i.e., when the heat is removed from the air, the water vapour will get condensed. It is easy to remove the moisture as a condensate than the moisture in water vapour state.

The air from the precooler enters into the Evaporator. In evaporator the cooling, heat removal is done by the boiling Refrigerant requires heat to boil. This heat is evolved from the air. Air is cooled to 2 to 4°C. When the temperature drops, the moisture turns to condensate moisture is a form of water.

The air with condensate enters into moisture separator where the moisture is remove with the help of autodrain centrifugal action of air during the centrifugal passage of air, moisture being the denser medium

The refrigerant circuit consists of a compressor, a condenser, a filter dryer, expansion valve or a capillary tube and an evaporator. the low temperature refrigerant vapour enters the compressor. compressor rises the pressure of the refrigerant. also the temp of ref. gas

The hot, high-pressure refrigerant enters into the condenser. In the condenser, heat is removed from the refrigerant by circulating cold air using the Fan. the low temperature, high-pressure liquid enters the filter dryer, where the dirt contents are removed. The refrigerant, then passed into the expansion valve, The temperature of the refrigerant leaving the expansion valve will be - 1°C, This low-pressure liquid refrigerant enters the evaporator. in the evaporator, the refrigerant boils and becomes low-pressure vapour. The Vapour enters the compressor and the cycle continues.



HEATLESS TYPE AIR DRYERS :-

Moisture from compressed air / gas is removed by suitable absorption media. The principal is based on Pressure Swing Adsorption and the operation is totally automatic and very simple. Two drying chambers are provided which keeps on changing their position according to designed cycle. While one chamber dries the air. The other gets regenerated by using a small portion of dried air, which flashes out the moisture from the absorption in previous cycle. electro pneumatic vales are provided for total automatic changer over moisture level of 80ppm (dew point-40 dec. c) or less can be achieved. The dryer is very compact and require very less maintenance.



WATER CHILLER :-

Water chiller is a refrigeration apparatus that produces cold water or Glycol mix, to cool industrial process equipment or provide comfort cooling for Various industrial applications. The heat load and leaving fluid temperatures may be different in process cooling application. A water chiller uses the evaporation of a refrigerant to cool the fluid through a heat exchanger. The fluid through a piping system or circuit to reach the cool several processes. The chiller can be either water or air cooled, and have a stationary or immersion configuration.



COMPRESSED AIR RECEIVER TANKS :-

Air receiver tanks are designed to provide a supply buffer to meet short-term demand spikes that can exceed the compressor capacity. They also serve to dampen reciprocating compressor pulsations, separate out particles and liquids, and make the compressed air system easier to control. In some cases, installing a larger air receiver tank to meet occasional peak demands can even allow for the use of a smaller compressor. Air receivers in compressed air systems serves the important purposes of : Equalizing the pressure variation from the start/stop and modulating sequence of the compressor Storage of air volume equalizing the variation in consumption and demand from the system Collecting condensate and water in the air after the compressor



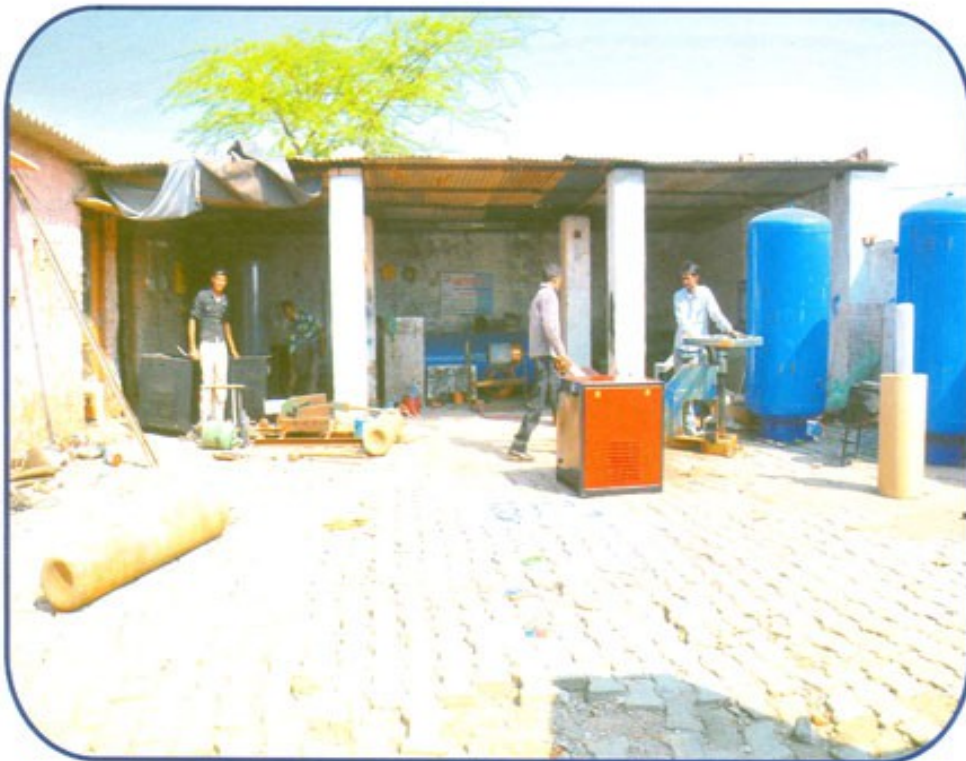
HEAT EXCHANGERS :-

Aftercoolers are heat exchangers for cooling the discharge from a air compressor. They use either air or water and are an effective means of removing moisture from compressed air. Aftercoolers control the amount of water vapor in a compressed air system by condensing the water vapor into liquid form. In a distribution or process manufacturing system, liquid water can cause significant damage to the equipment that uses compressed air. An aftercooler is necessary to ensure the proper functionality of pneumatic or air handling devices that are a part of process manufacturing systems.



Air Compressors :-

Two Stage Compressors The two Stage compressor consists of two or more cylinders. The atmospheric air enters into LP cylinder through inlet filters & valves and passes to HP cylinder through intercooler for final pressure. The highly efficient intercooler provides maximum heat dissipation between stage. They are useful in textile, plastic ind. paper ind. spray painting, blowring, cleaning, chemical plants, tyre inflating, pneumatic, ceramics, automobile, founderies, pharmaceuticals, service station etc.



AUTOMATIC DRAIN VALVE



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