

DEFROSTING

Aim: To defrost evaporator coils in the cold storage by water or hot gas defrosting method.

Apparatus: Hand lever, wrench, warm water pipe etc.

Working principle: In a low temperature application the frost formation on the cold storage evaporator coils is inevitable. The frost formation on the evaporator coils will reduce the efficiency of the cooling coils and will not get the required temperature in the cold storage. So for the reasons stated above, the frost formation on evaporator coils in cold storage should be melted out periodically. This process of removing the frost by melting is called defrosting. The most widely used defrosting methods in cold storages are water defrosting and hot gas defrosting. In its working principle of water defrosting the warm water is sprayed over the frost of the evaporator coils. The frost will melt due to the temperature difference between warm water and frost on the evaporator coils. Similarly in hot gas defrosting the hot gas from the condenser header is passed through the solenoid valve with the help of OMRON Timer relay or by hand operated valve. Here due to the temperature difference the frost will be melted out. The defrosting will be done depending on the thickness of the frost formation on the evaporator coils.

Procedure:

- Get back all the liquid from the evaporator coils to the receiver.
- Make sure the low pressure side comes down 0 kg/cm^2 (See the L.P. Gauge) and compressor should stop automatically.
- After 30 minutes again start the compressor to get down the accumulated pressure from the evaporator coils.
- Wait for another 30 minutes and make sure that the low pressure side does not rise.
- Close three input valves provided on the accumulator.
- Open two valves provided on the evaporator coils (To drain the oil from the evaporator to the accumulator)
- Spray the warm water over the frost on the evaporator coils.
- Make sure all the frost is melted out.
- Open the three valves provided on the accumulator.
- Close the two valves provided on the evaporator.
- Drain the oil accumulated in the accumulator by opening the valve provided at the bottom of the accumulator. (if oil is accumulated).
- Make sure all the oil is drained out. Close the bottom valve of the accumulator.
- Start the compressor and observe the evaporator coils are frosted evenly.

Hot gas defrosting:

- Get back all the liquid from the evaporator coils to the receiver.
- Make sure the low pressure side comes down 0 kg/cm^2 (See the L.P. Gauge) and compressor should stop automatically.
- After 30 minutes again start the compressor to get down the accumulated pressure from the evaporator coils.
- Wait for another 30 minutes and make sure that the low pressure side does not rise.
- Close three input valves provided on the accumulator.
- Open two valves provided on the evaporator coils (To drain the oil from the evaporator to the accumulator)
- Open the bypass valve M02 or put on the solenoid valve N0 4 with the help of OMRON Timer relay or by hand operator valve for 2 minutes.