



‘Open Drives’

In lower tonnage airconditioning products, namely the Window ACs, non-ducted splits and ducted systems, compressors are always hermetically or semi-hermetically sealed. This means that the compressor, and the motor that is needed to drive the compressor, are both packed into one single sealed unit.

However, in compressors used for larger tonnages — the screw and centrifugal compressors, to be precise — the drive motors are naturally rated much higher and tend to heat up quite a bit. These motor drives therefore require separate cooling provisions.

In hermetic chillers, therefore, a separate liquid refrigerant line is taken from the condenser and injected into the motor casing. The refrigerant cools the motor. Thus, in hermetic chillers, the produced refrigeration effect is expended in cooling the motor, thereby making the net refrigeration effect lower than open drive chillers. The loss of refrigeration effect is around 3-4%.

To eliminate this waste of energy, many Screw and Centrifugal Chillers offer compressors with ‘Open Drives’. In such chillers, the motor driving the compressor is not packaged with the compressor. Instead, it is housed separately. This enables the motor winding to be air-cooled, which is more than sufficient to maintain the motor at its recommended operating temperature. Hence there is no load on the airconditioning cycle at all.