

Currently, the scroll compressors are used in small capacity (3 to 50 kW) refrigeration, air conditioning and heat pump applications. They are normally of hermetic type. Scroll compressors offer several advantages such as:

1. Large suction and discharge ports reduce pressure losses during suction and discharge
2. Physical separation of suction and compression reduce heat transfer to suction gas, leading to high volumetric efficiency
3. Volumetric efficiency is also high due to very low re-expansion losses and continuous flow over a wide range of operating conditions
4. Flatter capacity versus outdoor temperature curves
5. High compression efficiency, low noise and vibration compared to reciprocating compressors
6. Compact with minimum number of moving parts

## Questions and Answers:

1. Which of the following statements concerning fixed vane, rotary compressors are true?

- a) These compressors are used in small capacity systems (less than 2 kW)
- b) They require suction valve, but do not require discharge valve
- c) Refrigerant leakage is minimized by hydrodynamic lubrication
- d) Compared to reciprocating compressors, the re-expansion losses are high in rotary vane compressor

**Ans.: a) and c)**

2. Which of the following statements concerning multiple vane, rotary compressors are true?

- a) Compared to fixed vane compressors, the leakage losses are less in multiple vane compressors
- b) Multiple vane compressors do not require suction and discharge valves
- c) A non-return, check valve is used on suction side of the compressor to minimize cycling losses
- d) All of the above

**Ans.: d)**