Connecting up the installation / Charging

Vacuum Pumping

Never switch on a compressor when under vacuum: an arcing may occur (corona effect) between the terminals or a terminal and earth. This arcing causes deposits of conductive carbon that can affect the insulation of the terminal. It may even cause it to disintegrate with the accompanying risk of gas and oil leakage. Always check that the terminal cover has been properly fitted.

Never carry out an electrical safety test when the compressor is under vacuum. The same phenomenon as described before may occur.

Charging

The system should only be charged with the appropriate refrigerant indicated on the compressor's identification plate.

- When azeotropic refrigerants (pure refrigerants) are being used charging can be carried out in the vapour phase of the suction line or in the liquid phase on the liquid line between the condenser and the filter drier.

- With non-azeotropic refrigerants (blends) charging must be carried out only in the liquid phase in order to keep the correct proportions of the blend.

When charging in the vapour phase in the suction line it is advisable to break the vacuum by charging slowly until the pressure in the system reaches 4 to 5 bars with R22, R404A (R507) or approximately 2 bars with R12 and R134a.

Starting-up

Before starting the compressor check that:

- all valves on the compressor or the condensing unit are open
- the correct electrical equipment (relay, protector, and capacitor) is being used
- the supply voltage is correct and that the supply cables are sufficient to avoid a large voltage drop
- the start relay (mounted in a separate electrical box) is in the vertical position.

Continue charging slowly until reaching the manufacturer's recommended charge quantity or until the operating conditions are obtained (pressure) according to the type of equipment.

Diagnostic

Do not leave the charging cylinder connected to the installation even when the valves are closed.

Leave the system running for some time.

Check that there is no abnormal noise and that the bottom of the compressor housing is normally hot.

If the top of the compressor is sweating, liquid refrigerant is returning to the compressor: adjust the charge or increase the superheat of the expansion valve.

Leak detection

Use an appropriate electronic leak detector suitable for the type of refrigerant.

Check flared connections and the glands of all valves. The gland nut may need tightening.

Replace the valve covers, which provide additional security in the case of leakage from the valve gland.