

PROPOSAL ON INSTALLATION OF TANDEM SCROLL COMPRESSOR

(Only For Reference)

I. Purpose

The purpose is to carry out the graded energy control of air-conditioning system, and make it more convenient and energy-saved.

II. Mode of Control

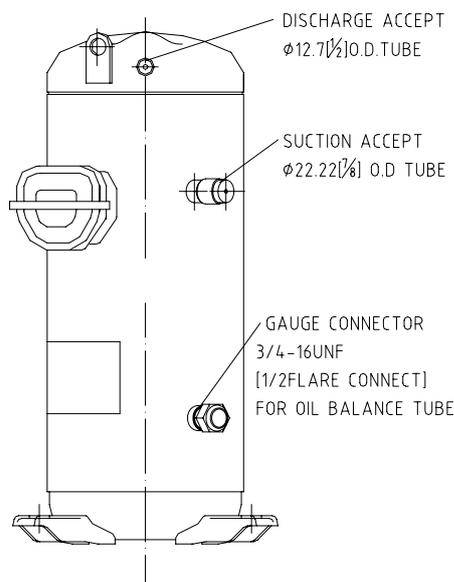
The system is composed of two scroll compressors of the same or different horsepower through the tandem way. The graded energy adjustment of 0%—50%—100% or 0%—40%—60%—100% can be realized by controlling on/off of single compressor. Accordingly, the system running efficiency will be improved when some parts are loaded, and the energy can be saved.

III. Management of Oil level

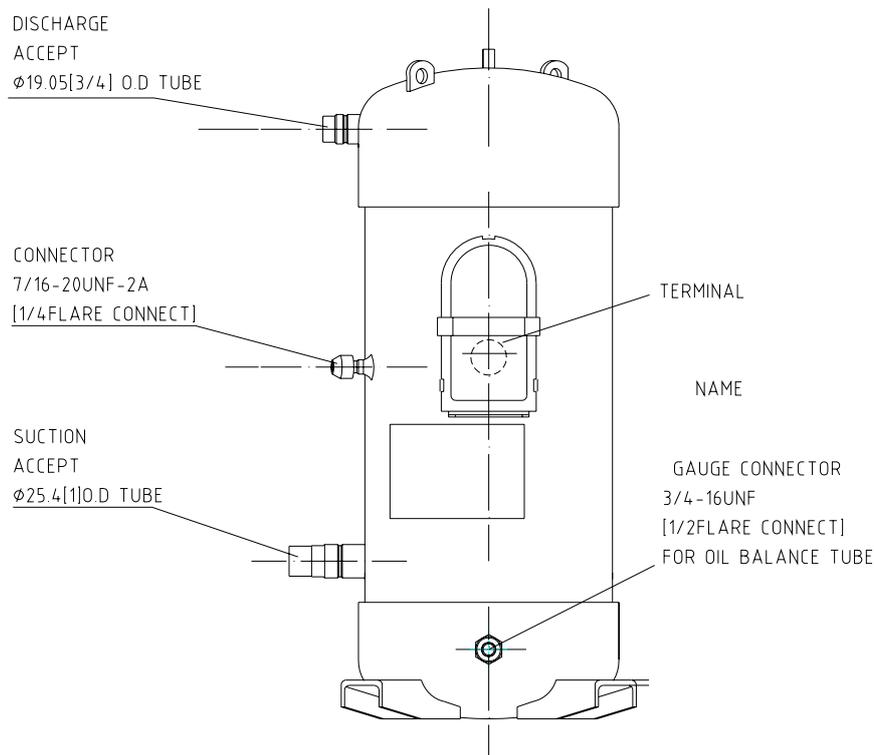
To ensure the normal running of the compressors, each crankcase should contain proper oil. Therefore, the first problem in tandem compressors is about oil return. In addition, be sure to meet the lubricating requirement of the compressors during either one or both compressors operation, avoiding oil starvation or too much oil.

IV. Instructions on Tandem Compressors Connecting Port

C-SB MODEL:



C-SC MODEL:



V. Based on the above considerations on oil equalization, we recommend the following techniques on tandem compressors.

1. To the tandem compressors with the same capacity, the oil separator is recommended.

See fig.1 for the compressor connection. The oil separator is installed in the discharge tube of each compressor. The oil separator should separate 95% the oil mixed in the discharge gas and return the oil back to the low pressure side of Compressor A and B.

As the compressors stop, the excessive lubricant oil in one compressor can flow into another compressor through the oil equalizing tube.

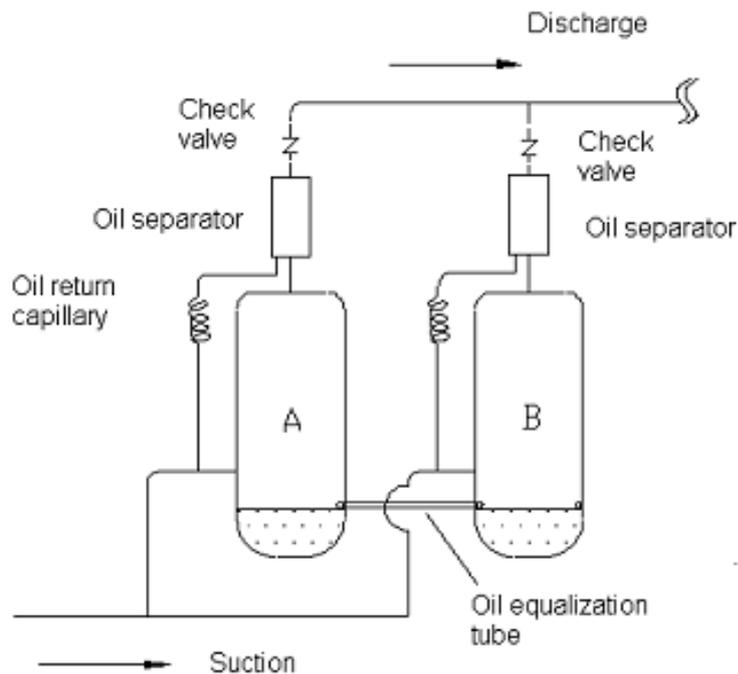


Fig.1 The principle of tandem

2. We recommend installing check valve on the discharge tube of each compressor, which ensures the refrigerant not flood back when one of the compressors is running.

Option of check valve: (R407C)

Max Working Pressure: 3.2Mpa;

Max Working temprature: 140°C

3. Our Enduring Test to this plan gets the following conclusion: the tandem compressors can realize the oil equalization when either one or both compressors run.

4. To prevent the hot gas bypass from high pressure side to low pressure side, it is necessary to install an oil return capillary on the oil return tube. The recommended capillary size is $\Phi 1 \times 1000\text{mm}$, and the filter should be installed before the capillary in order to prevent the blockage.

5. Selection of Oil Separator

Oil separator is used to separate the refrigerant oil from the discharged gas of the compressor. The discharged gas migrates into the container through the inlet of the oil separator. With the gas speed slowing down, the oil and the refrigerant can be divided gradually by the filter in the

container.

In Japan, oil separator with direct oil return (continuous oil return) is recommended in the air-conditioning systems.

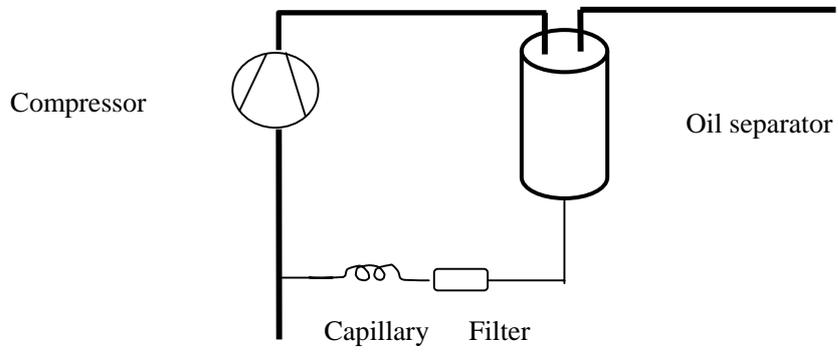


Fig.2 Oil separator connection.

Scroll Compressor Sales Head Office

2007-9-20