viewpoint of preventing global warming.

[0005]

Here, from the viewpoint of preventing global warming, as a refrigerant having a low GWP, for example, R1123 (1,1,2-trifluoroethylene) and R1132 (1,2-difluoroethylene) have been suggested (for example, refer to PTL 1 or PTL 2).

[0006]

However, the stability of R1123 (1,1,2-trifluoroethylene) and R1132 (1,2-difluoroethylene) is low compared to that of refrigerants of the related art, such as R410A, and in a case where radicals are generated, there is a concern that the refrigerant may change into another compound due to a disproportionation reaction. Since a disproportionation reaction is accompanied by large thermal emission, there is a concern that the reliability of the compressor and the refrigeration cycle device may deteriorate. Therefore, in a case where R1123 or R1132 is used in the compressor and the refrigeration cycle device, it is necessary to suppress a disproportionation reaction.

Citation List

Patent Literature

[0007]

PTL 1: International Publication No. 2012-157764

PTL 2: International Publication No. 2012-157765

SUMMARY ~~OF THE INVENTION~~

[0008]

Considering the above-described problem of the related art, for example,

[0008]

Considering the above-described problem of the related art, for example, in a compressor which is used for an air conditioner or the like, the present invention specifies an aspect of a more appropriate compressor in using a working fluid containing R1123. In addition, the present invention provides a more appropriate refrigeration cycle device in using a working fluid containing R1123.

[0009]

According to an aspect of the present invention, there is provided a compressor which uses a refrigerant containing 1,1,2-trifluoroethylene as a working fluid, and uses a polyol ester oil as a compressor lubricating oil. In addition, a fixed scroll and a revolving scroll each has a spiral lap rising from an end plate; and a compression chamber which is formed by meshing the fixed scroll and the revolving scroll, are provided. Furthermore, a discharge hole which is provided at a center position of the end plate of the fixed scroll, and is open to a discharge chamber; and a bypass hole which is provided in the end plate of the fixed scroll, and communicates with the compression chamber and the discharge chamber at a timing different from a timing at which the compression chamber communicates with the discharge hole, are provided. In addition, a check valve which is provided in the bypass hole, and allows a flow from the compression chamber side to the discharge chamber side, is provided.

[0010]

In addition, according to an aspect of the present invention, there is provided a compressor which uses a refrigerant containing 1,1,2-trifluoroethylene as a working fluid, and uses a polyol ester oil as a compressor lubricating oil. In addition, a fixed scroll and a revolving scroll

each having a spiral lap rising from an end plate; a compression chamber which is formed by engaging the fixed scroll and the revolving scroll; a first compression chamber which is formed on an outer wall side of the lap of the

compression chamber which is formed on an inner wall side of the lap of the revolving scroll, are provided. In addition, a suction volume of the first compression chamber is greater than a suction volume of the second compression chamber.

[0011]

According to ~~the~~ another aspect of the present invention, there is provided a refrigeration cycle device including: the above-described compressor; a condenser which cools a refrigerant gas that is compressed by the compressor and has a high pressure; a throttle mechanism which reduces the pressure of the high-pressure refrigerant which is liquefied by the condenser; an evaporator which gasifies the refrigerant of which the pressure is reduced by the throttle mechanism; and piping which links the compressor, the condenser, the throttle mechanism, and the evaporator to each other.

[0012]

As described above, according to the present invention, it is possible to obtain a compressor which is more appropriate in using a working fluid containing R1123, and a refrigeration cycle device.

BRIEF DESCRIPTION OF DRAWINGS

[0013]

FIG. 1 is a system configuration view of a refrigeration cycle device which uses a compressor according to a first embodiment of the present invention.

FIG. 2 is a view comparing R410A and R1123 with each other by computing a refrigeration performance in a case where a pressure and a temperature in the refrigeration cycle, and a displacement volume of the

compressor are the same, and cycle efficiency (COP), at proportions of 30% by