[CLAIMS]

[Claim 1]

A heat pump apparatus, comprising:

a compressor including a cylindrical shell, the compressor being configured to compress a refrigerant; and

a shell heat exchanger including a helical conduit wound around an outer circumference of the shell, the shell heat exchanger being configured to transfer heat of the shell to a heating medium flowing through the conduit, wherein:

the shell heat exchanger includes:

a plurality of segments; and

joining portions configured to connect end portions of adjacent segments;

the segments each at least partially have an arc-like shape along the outer circumference of the shell when viewed from an axial direction of the shell;

the segments are removable in a radial direction of the shell when the joining portions are separated;

the segments each include a plurality of arc-like shaped pipes in parallel with each other; and

the pipes adjacent to each other are welded to each other.

[Claim 2]

The heat pump apparatus according to claim 1, wherein at least one of the joining portions is in a joined state by brazing or soldering.

[Claim 3]

The heat pump apparatus according to claim 1, wherein at least one of the joining portions is in a removably connected state with use of a fastener.

[Claim 4]

The heat pump apparatus according to any one of claims 1 to 3, further comprising a pipe through which the heating medium flows,

wherein an end portion of the pipe is joined to an inlet or an outlet of the shell heat exchanger by brazing or soldering.

[Claim 5]

The heat pump apparatus according to any one of claims 1 to 3, further comprising a pipe through which the heating medium flows,

wherein an end portion of the pipe is removably connected to an inlet or an outlet of the shell heat exchanger with use of a fastener.

[Claim 6]

The heat pump apparatus according to claim 1, wherein at least one of the joining portions includes:

a first member installed on an end portion of one of the segments;

a second member installed on an end portion of another one of the segments; and

a fastener configured to removably connect the first member and the second member to each other.

[Claim 7]

The heat pump apparatus according to claim 1, further comprising:

a pipe through which the heating medium flows;

a first member installed on an end portion of the pipe;

a second member fixed to an inlet or an outlet of the shell heat exchanger; and

a fastener configured to removably connect the first member and the second member to each other.

[Claim 8]

The heat pump apparatus according to claim 6 or 7, further comprising an elastic member between the first member and the second member.

[Claim 9]

The heat pump apparatus according to any one of claims 1 to 8, wherein:

the segments each have, on end portions thereof, open ends of the plurality of arc-like shaped pipes; and

the open ends of one of adjacent segments and the open ends of the other of the adjacent segments communicate with each other through the joining portions.