

ABSTRACT

A first bypass valve (27) that sets discharge capacity to 60% is provided in a first scroll 21 of an asymmetrical spiral-type scroll compressor. Also, a second bypass valve (40) that makes suction side and discharge side communicated with each other so that set load of the compressor becomes 50% is provided outside a scroll of the first scroll (21). In this way, by closing the first and second bypass valves (27, 40), effective load of the compressor is set to 100%. Also, by opening the first bypass valve (27) and concurrently closing the second bypass valve (40), the effective load of the compressor is set to 60%. Further, by opening both the first and second bypass valves (27, 40), the effective load of the compressor is set to 30%. That is, 50% or lower partial load operation with high reliability is performed by setting volume ratio V_r during minimum capacity operation to a value of "1" or more. As a result of this, 50% or lower partial load operation can be changed over in multiple stages.