

pressure between the discharge port and the suction port becomes zero. In other words, when the normal start-up is performed, the pressure at the discharge port and the pressure at the suction port are balanced after some time period has elapsed since the compressor 15 has stopped its operation.

[0055] In a case where the normal start-up is performed, when the compressor 15 is restarted from the operation-stop state, the pressure at the discharge port needs to be increased sharply and the pressure at the suction port needs to be reduced sharply as indicated by the pressure characteristics 61A and 62A. This is because in a case where the normal start-up is performed, a differential pressure between the discharge port and the suction port is zero when the compressor 15 is in an operation-stop state. In a case where the normal start-up is performed, a differential pressure during the operation stop is zero. Thus, at the time of restart, the pressure at the discharge port needs to be changed greatly, the pressure at the suction port needs to be changed greatly, and the restarting process needs a long period of time. As a result, the compressor 15 needs a greater energy amount 65A for restarting operation in a case where the normal start-up is performed.

[0056] In a case where the differential pressure start-up is performed, the compressor 15 is stopped with the valve of the solenoid valve 13 closed. Due to this configuration, when the differential pressure start-up is performed, the pressure at the discharge port slightly decreases and the pressure at the suction port slightly increases after the operation stop as indicated by the pressure characteristics 61B and 62B. Subsequently, even after some time period has elapsed since the operation stop,