Claims

1. An air compression device to be mounted on a vehicle, comprising:

a compressor which generates compressed air,

a housing which forms a housing space in which the compressor is housed, the housing having a first wall portion formed with an opening and a cover enclosing the opening, and a second wall portion opposite to the first wall portion,

a cooling portion which is arranged at an outside of the second wall portion of the housing with protruding from the second wall portion, and cools the compressed air, and

a protection cover which at least partially covers the cooling portion.

2. The air compression device according to claim 1, wherein an outer fan device which generates a cooling air flow toward the cooling portion by using air outside the housing.

3. The air compression device according to claim 1, further comprising:

a controller which controls the compressor, and

a dehumidifying portion which dehumidifies the compressed air passed through the cooling portion, wherein

the controller and the dehumidifying portion are arranged below the cooling portion;

the protection cover includes a baffle plate laid below the cooling portion; and

the baffle plate is configured to interrupt an air flow from the cooling portion toward the controller and the dehumidifying portion.

4. The air compression device according to claim 3, wherein

the protection cover includes a ventilation plate arranged vertically from the baffle plate;

the cooling portion is arranged between the ventilation plate and the outer fan device; and

a ventilation hole is formed in the ventilation plate.

5. The air compression device according to claim 3 or 4, wherein

the baffle plate includes a facing edge facing the housing; and

the facing edge forms, below the outer fan device, an opening area in cooperation with the housing.

6. The air compression device according to any one of claims 2 to 5, further comprising an inner fan device which generates cooling air flow toward the compressor, wherein

the housing includes an exhaust duct arranged above the outer fan device;

the cooling portion includes a cooling pipe having a first cooling section facing the exhaust duct and a second cooling section facing the outer fan device; and

the cooling air flow from the inner fan device is discharged to an outside from the housing through the exhaust duct.

7. The air compression device according to claim 6, wherein

the housing includes a first wall portion to which the inner fan device is mounted and a second wall portion at a side opposite to the first wall portion;

the exhaust duct includes an inner duct portion arranged in the housing space and an outer duct portion protruded toward the first cooling section from an opening formed in the second wall portion; and

the inner duct portion includes a sound absorbing area arranged below the opening to face the inner fan device.

8. The air compression device according to claim 7, further comprising a guide pipe which guides the compressed air from the compressor to the cooling portion,

wherein the guide pipe is connected to the cooling portion through the exhaust duct.