DESCRIPTION

TOP-LOADING-TYPE WASHING MACHINE

TECHNICAL FIELD

[0001]

The present disclosure relates to a washing machine including a control device.

BACKGROUND ART

[0002]

FIG. 6 shows electronic circuit board device 200 provided in a conventional washing machine disclosed in PTL 1.

[0003]

As shown in FIG. 6, the conventional washing machine includes electronic circuit board device 200 that controls power supply and an operation of an electric member such as a motor. Electronic circuit board device 200 includes mounting board 100 provided with power module 102 and electronic component 103, heat sink 104 attached to power module 102, and circuit case 106 housing mounting board 100 and heat sink 104.

Citation List

Patent Literature

[0004]

PTL 1: Unexamined Japanese Patent Publication No. 2000-252663

SUMMARY

[0005]

However, in the conventional configuration, when power module 102 mounted on mounting board 100 generates heat, air heated by the heat generation of power module 102 stays in circuit case 106. This increases a temperature of mounting board 100. Thus, there is a possibility that power module 102, electronic component 103, or the like may fail or malfunction.

[0006]

The present disclosure provides a washing machine that suppresses a failure and a malfunction of the control device by releasing heat generated in the control device to the outside.

[0007]

In an aspect, a top-loading-type washing machine of the present disclosure includes a housing, a container provided above and at a rear side of~~in~~ the housing, and a control device disposed in the container and configured to perform a laundry operation including washing, rinsing, and spin-drying. The control device has a board on which the electrical component is disposed, a heat dissipater provided in contact with the electrical component, and a cover disposed to cover the board. The cover is provided with a surface facing the board and covering the board from the bottom side, and an opening opened on ~~a~~ the surface~~ disposed over the heat dissipater~~. The heat dissipater extends from the electrical component to~~ at least partially~~ penetrate the cover through the opening, and the container includes a container opening located at a rear side, the container opening communicating the inside of the container to the outside of the housing.

[0008]

The washing machine of the present disclosure can release heat generated in the control device to the outside. It is therefore possible to prevent a failure and a malfunction of the control device caused by the heated air retention.

BRIEF DESCRIPTION OF DRAWINGS

[0009]

and heat sink 73, and the air inside or within and outside metal cover 76 is mixed.

[0046]

Second opening 61d provided in operation display panel 61 according to the present exemplary embodiment is located ~~above~~ below first opening 61c provided in second rib 61a. Consequently, water intrusion from the outside of housing 11 is suppressed. This improves safety.

[0047]

As described above, in the present exemplary embodiment, the washing machine includes housing 11, container 24b provided in housing 11, and controller 70 disposed in container 24b and configured to perform the laundry operation including washing, rinsing, and spin-drying. Controller 70 has power supply board 71 on which electrical component 72 is disposed, heat sink 73 provided in contact with electrical component 72, and metal cover 76 disposed to cover heat sink 73. Metal cover 76 is provided with opening 76a on a surface facing heat sink 73. Heat sink 73 extends from electrical component 72 to at least partially penetrate metal cover 76 via opening 76a.

[0048]

Thus, heat sink 73 is exposed to the outside of metal cover 76, and the heat generated in control device 50 is efficiently released to the outside of metal cover 76. It is therefore possible to suppress a failure and a malfunction of control device 50 caused by the heated air staying in metal cover 76.

[0049]

Further, metal cover 76 may include metal.

[0050]

Then, the heat dissipation effect via metal cover 76 is expected due to thermal conductivity of the metal. This improves the heat dissipation

CLAIMS

1. A top-loading-type washing machine comprising:

a housing;

a container provided above and at a rear side of~~in~~ the housing; and

a control device disposed in the container and configured to perform a laundry operation including washing, rinsing, and spin-drying,

wherein the control device includes a board on which an electrical component is disposed, a heat dissipater provided in contact with the electrical component, and a cover disposed to cover the board,

the cover includes a surface facing the board and covering the board from the bottom side, and an opening opened on ~~a~~ the surface ~~facing the heat dissipater~~, ~~and~~

the heat dissipater extends from the electrical component to ~~at least partially~~ penetrate the cover through the opening, and

the container includes a container opening located at a rear side, the container opening communicating the inside of the container to the outside of the housing.

2. The top-loading-type washing machine according to claim 1, wherein the cover includes metal.

3. The top-loading-type washing machine according to claim 1 or 2, wherein

the control device further includes an operation display unit at an upside,

the board is provided below the operation display unit, and

the cover is provided to cover the board from below the operation display unit.

~~4. The washing machine according to any one of claims 1 to 3, wherein the container is provided above and at a rear side of the housing, and the housing includes a container opening located at a rear side of the container.~~

~~5. The washing machine according to claim 4, wherein the container opening is provided above the opening.~~