# Claims

[Claim 1]

A marine boiler, comprising:

a furnace;

a burner which combusts a fuel for combustion and a combustion air in the furnace;

a volatile gas supply portion which supplies volatile gas containing volatile organic compounds generated in a crude oil tank to the furnace;

a discharging portion which discharges combustion gas generated due to combustion by the burner; and

a control portion which adjusts an amount of the fuel for combustion applied to the burner and an amount of the combustion air supplied to the burner, and controls an operation to be within a predetermined load range,

wherein the control portion includes a limited operation mode in which an operation is performed within a limited load range which is limited further than the predetermined load range so that the volatile gas, which flows from the volatile gas supply portion into the furnace and is introduced into the discharging portion, is maintained at a predetermined temperature or more, and stays in the furnace for a predetermined time or more.

[Claim 2]

The marine boiler according to claim 1, further comprising:

an inert gas supply portion which supplies inert gas sealed in the crude oil tank into the furnace; and

an adjusting valve which adjusts a flow rate of the inert gas which is supplied to the inert gas supply portion.

[Claim 3]

The marine boiler according to claim 1 or 2, further comprising:

a detection portion which detects volatile gas which has flowed to the outside; and

a shutoff valve which shuts off the supply of the volatile gas from the crude oil tank to the burner when the detection portion detects volatile gas which has flowed to the outside.

[Claim 4]

A method for operating a marine boiler, comprising:

a first operation step of adjusting amounts of a fuel for combustion and combustion air supplied to a burner by which the fuel for combustion and the combustion air are combusted in a furnace, and performing an operation within a predetermined load range; and

a second operation step of performing the operation within a limited load range which is limited further than

the predetermined load range so that volatile gas, which contains volatile organic compounds generated in a crude oil tank and flows into the furnace from a volatile gas supply portion which supplies the volatile gas into the furnace, is maintained at a predetermined temperature or more, and stays in the furnace for a predetermined time or more.

# Claims

[Claim 1]

A marine boiler, comprising:

a furnace;

a burner which combusts a fuel for combustion and a combustion air in the furnace;

a volatile gas supply portion which supplies volatile gas containing volatile organic compounds generated in a crude oil tank to the furnace;

a discharging portion which discharges combustion gas generated due to combustion by the burner; and

a control portion which adjusts an amount of the fuel for combustion applied to the burner and an amount of the combustion air supplied to the burner, and controls an operation to be within a predetermined load range,

wherein the control portion includes a limited operation mode in which the operation is performed within a limited load range which is limited further than the predetermined load range so that the volatile gas, which flows from the volatile gas supply portion into the furnace and is introduced into the discharging portion, is maintained at a predetermined temperature or more, and stays in the furnace for a predetermined time or more.

[Claim 2]

The marine boiler according to claim 1, further comprising:

an inert gas supply portion which supplies inert gas sealed in the crude oil tank into the furnace; and

an adjusting valve which adjusts a flow rate of the inert gas which is supplied to the inert gas supply portion.

[Claim 3]

The marine boiler according to claim 1 or 2, further comprising:

a detection portion which detects volatile gas which has flowed to a region outside a flow path through which the volatile gas circulates; and

a shutoff valve which shuts off the supply of the volatile gas from the crude oil tank to the burner when the detection portion detects volatile gas which has flowed to a region outside a flow path through which the volatile gas circulates.

[Claim 4]

A method for operating a marine boiler, comprising:

a first operation step of adjusting amounts of a fuel for combustion and combustion air supplied to a burner by which the fuel for combustion and the combustion air are combusted in a furnace, and performing an operation within a predetermined load range; and

a second operation step of performing the operation within a limited load range which is limited further than the predetermined load range so that volatile gas, which contains volatile organic compounds generated in a crude oil tank and flows into the furnace from a volatile gas supply portion which supplies the volatile gas into the furnace, is maintained at a predetermined temperature or more, and stays in the furnace for a predetermined time or more.