

Title (en)

FREEZE PROTECTION METHOD FOR HEATING PIPE AND HOT WATER PIPE OF BOILER

Title (de)

GEFRIERSCHUTZVERFAHREN FÜR HEIZUNGSROHR UND HEISSWASSERROHR EINES KESSELS

Title (fr)

PROCÉDÉ DE PROTECTION CONTRE LE GEL POUR TUYAU DE CHAUFFAGE ET TUYAU D'EAU CHAUDE DE CHAUDIÈRE

Publication

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Application

EP 13867829 A 20130913

Priority

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- KR 2013008315 W 20130913

Abstract (en)

[origin: EP2940391A1] The present invention relates to a freeze protection method of a gas boiler, which can prevent a heating pipe from freezing by using a heating water temperature sensor that is disposed in the boiler and can prevent a hot water pipe from freezing through the control of a three-way valve. The freeze protection method for a heating pipe and a hot water pipe of a boiler comprises the steps of: (a) converting the three-way valve (120) into a hot water mode and carrying out a combustion operation of the boiler, if the temperature of heating water falls below a preset freeze protection set temperature, and circulating the heating water through a closed loop including a circulation pump (140), a heating heat exchanger (110), the three-way valve (120) and a hot-water supply heat exchanger (130) by driving the circulation pump (140); and (b) converting the three-way valve (120) into a heating mode and performing an extinguishing operation of the boiler, if the temperature of the heating water is higher than a preset constant temperature, and circulating the heating water to the heating pipe (200) by the driving of the circulation pump (140). Accordingly, in addition to a freeze protection function for the heating pipe, freezing of the hot water pipe can be prevented, thereby overcoming the inconvenience of using hot water due to the freezing of the hot water pipe during winter. Also, since it is unnecessary to continuously carry out the combustion operation of the boiler in order to prevent the heating pipe and the hot water pipe from freezing, there is no significant difference in the amount of gas used when compared with existing freeze protection functions.

IPC 8 full level

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Citation (search report)

- [X] KR 20010003836 A 20010115 - DAEWOO ELECTRONICS CO LTD [KR]
- [I] KR 20100109198 A 20101008 - RINNAI KOREA CORP [KR]
- [I] JP S63207948 A 19880829 - RINNAI KK
- See references of WO 2014104537A1

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