

**PENGARUH PENGGUNAAN BLOWER TERHADAP HASIL KINERJA
TUNGKU KETEL UAP TIPE HORIZONTAL
DENGAN BAHAN BAKAR KAYU BAKAR**

INTISARI

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Pengoperasian ketel uap pada masa ini, terutama pada industri tahu belum semua menggunakan blower padahal penggunaan blower dapat meningkatkan udara atau oksigen dalam pembakaran untuk menghasilkan panas, Hal tersebut menjadi pertimbangan untuk melaksanakan penelitian menggunakan blower dengan harapan dapat menaikkan nilai efisiensi maupun laju produksi uap sehingga hasil penelitian ini dapat dirasakan manfaatnya bagi penduduk Indonesia khususnya perajin industri tahu.

Penelitian ini menggunakan variasi penggunaan blower pada tungku ketel uap tipe horizontal TPD 60H dengan volume pengisian air ketel 169,56 liter dan volume air bak masak 102,1 liter. Variasi blower tersebut ada tiga macam yaitu penggunaan blower kecil berdiameter output 2 inci, penggunaan blower besar berdiameter output 3 inci dan tanpa penggunaan blower. Penelitian ini bertujuan untuk mengetahui pengaruh variasi penggunaan blower terhadap Efisiensi ketel uap, lama waktu pencapaian suhu didih air ketel, waktu menghasilkan uap, waktu pencapaian suhu didih air bak masak dan laju bahan bakar. laju produksi uap, suhu uap.

Penggunaan blower memberikan beda nyata terhadap laju produksi uap, waktu menghasilkan uap, suhu uap, waktu pencapaian suhu didih air ketel, dan waktu pencapaian suhu didih air dibak masak namun variasi blower tidak memberikan pengaruh signifikan terhadap laju bahan bakar. Nilai efisiensi ketel uap tertinggi pada periode *unsteady state* yaitu pada penggunaan blower kecil sebesar 9,85 %, dan pada periode *steady state* yaitu efisiensi pada penggunaan blower besar bernilai 20,72 %.

Kata kunci: blower, ketel uap, tungku, laju produksi, efisiensi.

**THE EFFECT OF BLOWER UTILIZATION ON THE PERFORMANCE
OF THE HORIZONTAL TYPE STEAM BOILER FURNACE
WITH FIREWOOD AS A FUEL**

ABSTRACT

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The operation of the boiler in contemporary times, especially in tofu industry has not all of them using the blower yet, even though the use of blower can increase the air or oxygen supply on the heat production combustion. That matter is the reason for carrying out this research with the hope that the utilizing of blower can raise the efficiency and rate of production of steam so that the results of this research can give benefit to the Indonesian people, especially to Tofu industries.

This study used variation of blower used for TPD 60H type horizontal boiler with a boiler water volume of 169.56 liters and 102.1 liters of cooking container water volume. The variation of the blower is grouped into three types, namely, the use of smaller blower output of 2 inches in diameter, the use of larger blower output of 3 inches in diameter and without the use of blower. This study aims to determine the effect of the variety of blower's utilization on the boilers efficiency, boiler water boiling temperature, the duration of steam production, the steam production rate, the temperature of the steam, the time of water boiling temperature attainment of the cooking water boiling container and the consumption fuel rate.

The use of blower variations give the significant effects on the rate of steam production, the steam production duration, steam temperature, the duration of the attainment of water boiler boiling temperature and the duration of the attainment of the water boiling temperature in the cook container, however blower variations does not have a significant impact on the fuel rate. The highest boiler efficiency value during the period of *unsteady state*, namely the utilization of the small blower is 9.85%, and in the *steady state* period, namely efficiency in utilization of the large blower is 20.72%.

Keywords: blower, steam boiler, furnace, production rate, efficiency