

THE BRITISH COAL UTILISATION RESEARCH ASSOCIATION

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Small Steam Generators

By F.B.Karthauser  
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(1) Introduction

Many users of steam require comparatively small amounts and need them only for short periods. In this country much of this steam is generated in hand-fired shell boilers, often of the vertical type. From 200 to 250 lb./sq.in. pressure is the maximum obtainable in these boilers and this is in most cases sufficient. On the other hand, in many industries there has been an increasing demand for steam of higher pressure and temperature. In cases where a comparatively large amount of high-pressure steam is required small water-tube boilers have been especially built for the purpose. No standard small unit operating at high pressures is manufactured in Great Britain.

When the Association was investigating the commercial possibilities for a flexible, compact, automatically controlled solid-fuel-fired unit suitable for high pressures, a survey was made of small steam generators and the following notes give the main facts and some of the conclusions. Some of the units described have already been developed commercially and are available on the market; their steaming capacities range from 500 to 2000 lb./hr. Some prototypes that have not yet reached commercial production and units of higher capacity have also been included.

During the war considerable development of what is sometimes called the "packaged boiler unit" took place in various countries. The necessity of speeding up the building of war factories and of providing equipment for the Services and for the reconstruction of cities has produced compact boilers with fans, feed pumps, control equipment and instruments, mounted on one baseplate and tested in the manufacturer's works before shipment. These units need no foundations and are ready for operation without further testing and inspection. The large mobile power units developed for the U.S.S.R. by boiler and turbine manufacturers in this country are well-known examples and some information about them has been