

BURNER INSTALLATIONS

Most burners are installed in boilers designed for coal and the results in most cases are quite satisfactory. Where a boiler is being purchased for use with oil heating equipment care should be taken to select a boiler that has long flue passes, that do not short circuit the gases from the combustion chamber to the flue. There are several boilers that have been designed especially for oil burning that are very efficient and economical. All oil fuel boilers should be provided with automatic feed water regulator or low water cut-off as the boiler is often neglected on account of the automatic features eliminating the necessity of a daily inspection.

Although slightly less draft is required for oil heating equipment than is required for coal fires and a smaller chimney area would be satisfactory, it is recommended that the chimney be designed to meet the boiler manufacturers' requirements as specified for coal burning. It is preferable to have the oil burner flue isolated from other flues as this may be helpful in preventing any mechanical sound from being transmitted to the rooms of the house. A well designed chimney that will insure uniform draft conditions is just as important to an oil burner as it is to a coal fired heating plant.

With many of the cast-iron water-tube sectional boilers it has been found possible to increase their rating to some extent by using oil as a fuel. This increase amounts to from 10 to 25 per cent, but boiler equipment should not be selected on this basis without the knowledge and approval of the boiler manufacturer. This increase in rating is usually not possible with round boilers. Where round boilers are used with oil heating equipment it is best to select a boiler that has extra indirect heating surface in the form of intermediate sections.

In applying oil heating equipment to existing coal burning boilers it is often advisable to baffle the passes in order to increase the travel of the hot flue gases and also to keep them in closer contact with the heating surface. In fire-tube boilers it is often desirable to use retarders inserted in the tubes so as to give the flue gases a spiral motion and keep them in contact with the surface of the tube.

For warm-air installations a furnace of welded construction should be selected as it is more suitable for the conditions imposed by oil heating and will require less attention. Cast-iron sectional furnaces will give satisfactory results if care is taken to insure tight joints and a careful inspection made each year.

For domestic hot-water supply a steam coil heater is quite satisfactory with steam or vapor and, with suitable controls on the hot-water tank, can be used the year round at a very reasonable cost. An iron shell type of heater with local hot-water circulating lines between the shell and the water of the boiler and with a copper coil in the shell, through which the water in passing is heated, is very satisfactory with either steam or hot-water boiler, but care must be taken to have such heaters of ample capacity and connected to ample size storage tanks, especially with hot-water boilers. This system may also be very successfully used the year around if an automatic control such as described under "Automatic

Burner Control" is used. Small size burners are made that are suitable for installing under small hot-water heaters and operating automatically from a control on the hot-water tank. A coil in the combustion chamber is not generally satisfactory.

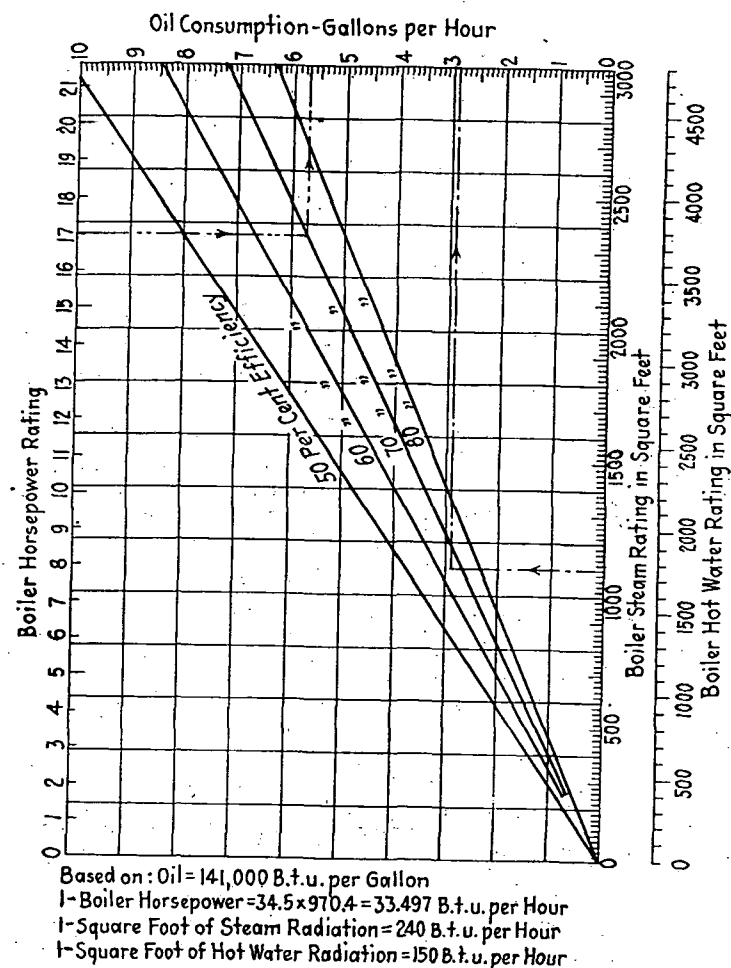


FIG. 2. FULL LOAD RATE OF OIL CONSUMPTION FOR HEATING BOILERS.

Installations should always be made by trained men under the direction of the burner manufacturer as every burner has peculiarities that should be given consideration when the installation is made. It is also important that the burner should be correctly adjusted for each instal-