

ventilating units where they are located at an elevation lower than the dry return pipe. Radiators located below the supply main but above the dry return main may have the drip on the steam drop to the radiator omitted if an overhead valve is used, as shown in Fig. 14. If they are located above the dry return pipe, they are connected in the manner shown by Fig. 15, which follows the same method as direct radiators similarly located.

Convactor Connections

Convectors are often installed without control valves, a damper being used to shut off the flow of air to retard the heat transfer from the convactor even though it is still supplied with steam. The piping connections for a convactor with the inlet and outlet at the same end are shown in

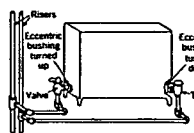


FIG. 9. CONNECTIONS TO STEAM-TYPE RADIATOR FOR TWO-PIPE SYSTEM

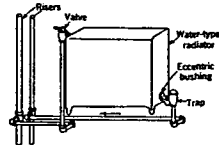


FIG. 10. TOP AND BOTTOM OPPOSITE END RADIATOR CONNECTIONS

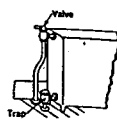


FIG. 11. TOP AND BOTTOM RADIATOR CONNECTIONS

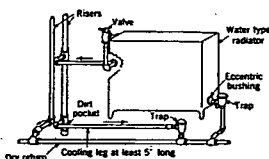


FIG. 12. TOP AND BOTTOM OPPOSITE END RADIATOR CONNECTIONS

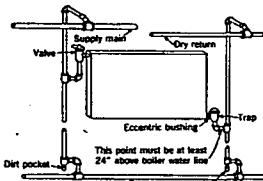


FIG. 13. CONNECTIONS TO RADIATOR HUNG ON WALL

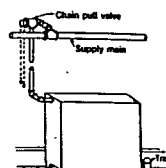


FIG. 14. CONNECTING DROP RISER DIRECT TO RADIATOR

Fig. 16. There is no valve on the steam side but there is a thermostatic trap on the return. The damper for control is shown immediately above the convactor. This piping is suitable for atmospheric, vapor, vacuum, sub-atmospheric, and orifice systems of the up-feed type. A similar unit with connections on opposite ends and suitable for the same systems is shown in Fig. 17. This unit has no damper but requires a valve on the steam connection for control. When valves must be located so as to be accessible from the supply air grille, the arrangement usually takes the form indicated in Fig. 18. A convactor located in the basement and supplying air to a room on the floor above may be piped as pictured in Fig. 19 for all systems except gravity one-pipe or two-pipe systems. Convectors with damper control, installed in cabinets or under windows, usually are connected as shown in Fig. 20.

Pipe Coil Connections

Pipe coils, unless coupled in a correct manner, often give trouble from short circuiting and poor circulation. The method of connecting shown

in Fig. 21 is suitable for atmospheric, vapor, vacuum, sub-atmospheric, and orifice systems.

Pipe Connections for Indirect Heating Units

The coils or heat exchangers used to temper the air for ventilation and air conditioning are supplied with steam using the same piping principles as are used for connecting radiators for the given type of system. If the tempering coil is located at an elevation lower than the dry return piping, the connection would be as shown by Fig. 22 for a two-pipe vapor system. For a one-pipe system the air line through the thermostatic trap would be omitted and the usual air vent substituted.

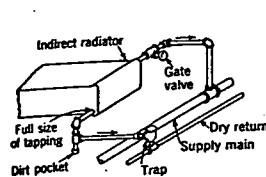


FIG. 15. PIPING CONNECTIONS TO INDIRECT RADIATORS

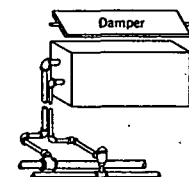


FIG. 16. CONVECTOR CONNECTIONS SAME END

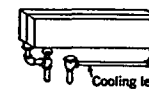


FIG. 17. HORIZONTAL FIN-TYPE HEATING UNIT

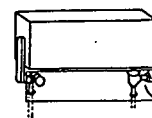


FIG. 18. HEATING UNIT VALVES BEHIND GRILLE

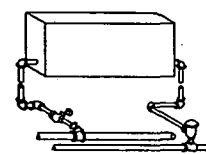


FIG. 19. HEATING UNIT WITH VALVES IN BASEMENT

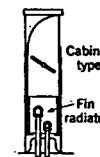


FIG. 20. FIN-TYPE HEATING UNIT IN CABINET

Where a building is served by a vacuum system or a sub-atmospheric system the air heaters should be piped in the usual manner and traps of large capacity, preferably of the combination float and thermostatic type, should be used. In an orifice system, traps should be used on the returns so that a pressure above that of the atmosphere may be secured on the heaters. A similar connection may be used for a closed two-pipe vapor system using a condensation pump with receiver.

In connecting air heaters a branch steam main is directed to the fan room and a single branch is connected to each row of heating units. Each of these branches is split into as many connections as are needed for each row, governed by the number of stacks and width of stacks. Each stack must have at least one steam connection. Wide stacks are more evenly heated with two steam connections, one at each end, the stacks being divided and a return connection provided for each steam connection. The return connection should use a nipple full size of the outlet tapping and reduce the pipe size to the normal return size as required by use of a reducing elbow as shown in Fig. 23.