on the steam branch down to the radiator may be omitted if an overhead valve, as shown in Fig. 13, is used. This method is also suitable for vacuum, sub-atmospheric, and orifice systems.

Convector Connections

Convectors often are installed without control valves, a damper being used to shut off the flow of air to retard the heat transfer from the convector even though it is still supplied with steam. The piping connections for a convector with the inlet and outlet at the same end are shown in Fig. 14. 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 convector. This piping is suitable for atmospheric, vapor, vacuum,

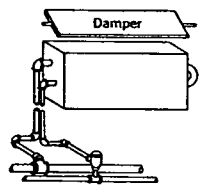


Fig. 14. Convector Connections Same End

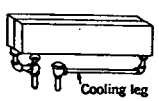


Fig. 15. Horizontal Fin-Type Heating Unit

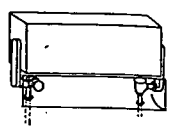


Fig. 16. Heating Unit Valves Behind Grille

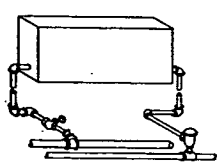


Fig. 17. Heating Unit with Valves in Basement

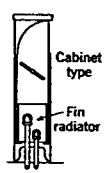


Fig. 18. Fin-Type Heating Unit in Cabinet

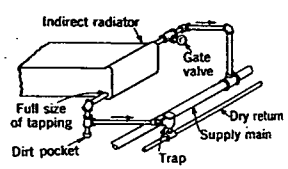


Fig. 19. Piping Connections to Indirect Radiators

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. 15. 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. 16. A convector located in the basement and supplying air to a room on the floor above may be piped as pictured in Fig. 17 for all systems except gravity one-pipe or two-pipe systems. Convectors with damper control, installed in cabinets or under window sills, usually are connected as shown in Fig. 18.

Vapor systems with heating units in the basement where the returns are dry would be treated as in Fig. 19. Similar heating units where a wet return is available would be connected as shown in Fig. 20. If the dry

return were on a vacuum, atmospheric, sub-atmospheric or orifice system, the treatment would be identical.

On all heating units it is important to use a nipple the full size of the outlet and to reduce the pipe size to the normal return size required, by the use of a reducing ell, as indicated in Fig. 21.

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. 22 is suitable for atmospheric, vapor, vacuum, sub-atmospheric, and orifice systems.

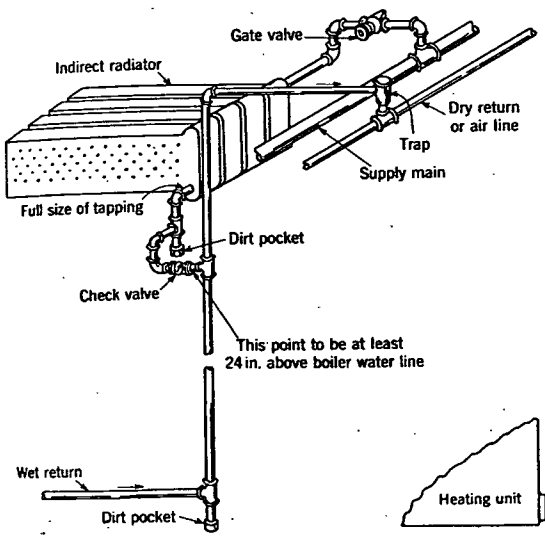


Fig. 20. Typical Piping Connections to Concealed Heating Units with Wet Returns

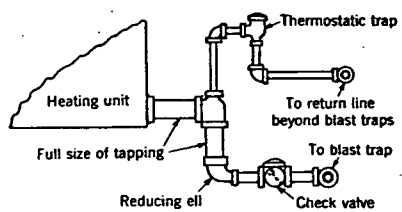


Fig. 21. Heating Unit Return Connection with Separate Air Line

Indirect Air Heater Connections

Heating units for central fan systems have simple connections on the steam side. The steam main is carried into the fan room and has a single branch tapped off for each row of heating units. Each of these main branches is split into as many connections as need be made to each row, governed by the number of stacks and the width of the stacks. Each stack must have at least one steam connection, and wide stacks are more evenly heated with two steam connections, one at each end.