

the pressure in the first building is considerably higher than necessary. It also shows that if the expansion tank were located at the line 3, 7, 11, the pressure at that point would remain constant and the pressure would fall below the line 7, 8, 5, and above the line 7, 6, 5. In that case, the expansion tank would need to be at a higher elevation than if located at the pump. This comparison explains the relation which exists between the location and the required elevation of the expansion tank.

In some very large central systems the loss of water from the system is so great that make-up water must be supplied continuously and the expansion tank is not required.

#### REFERENCES

- The Design of Gravity Circulation Hot Water Heating Systems*, By Prof. F. E. Giesecke.  
*Pipe Sizes for Hot Water Heating Systems*, By F. E. Giesecke and Elmer G. Smith (JOURNAL, A. S. H. V. E., June, 1929).  
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## CHAPTER 22

### PIPING AND EQUIPMENT FOR LAUNDRY, KITCHEN AND HOSPITAL SERVICE

*Description of Equipment; Steam, Water, and Power Requirements; Size of Connections; Installation Data.*

THE equipment for these highly specialized institutions varies greatly, and only average installations can be treated here. For special cases it is always recommended that consultation be had with specialists and with manufacturers of this equipment who maintain competent engineering staffs.

In a general way each steam-using unit should have a separate supply valve, with the supply main arranged to drain whether or not the supply valve shall be open, and a separate return trap, draining to a return main placed below the unit.

It is, of course, possible, though not entirely desirable where high-pressure steam is available, to force the condensation up to overhead return mains.

#### EQUIPMENT FOR LAUNDRIES

##### *Equipment Required*

The minimum reasonable equipment of a well-equipped flatwork laundry is as follows:

- One 36 x 48-in. washing machine,
- One 36 x 64-in. washing machine,
- One 26-in. centrifugal extractor,
- One 4-roll 90-in. flatwork ironer,
- One 30 x 42-in. drying tumbler,
- One 2-truck dry room,
- One 15-gal. starch cooker,
- One 38-in. pressing machine for uniforms, etc.,
- One hand-ironing board,
- Two 8-lb. electric irons,
- Two laundry tubs,
- One wringer.

If it is a hospital laundry, one disinfecter about 36 in. high by 42 in. wide by 84 in. long, may be included. This is large enough to receive an ordinary hospital mattress without distortion. It is placed in the laundry, rather than elsewhere, for the reason that its principal work consists of disinfecting (or sterilizing) materials which will be laundered.

Such a laundry would meet the requirements of a 250-bed hospital or a 350-room hotel on the basis of a 44-hour operation per week. For a smaller number of people the equipment would be about the same but would be operated fewer hours per week. The purpose of the two washing