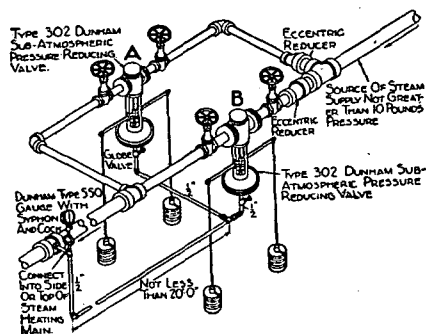
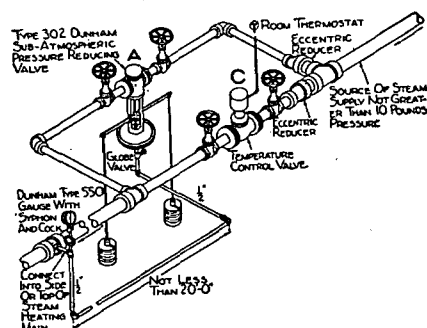
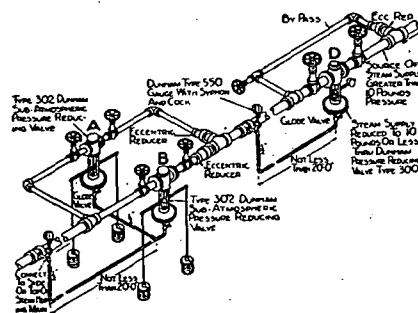




Application 1



Application 2



Application 3

Sub-Atmospheric Reducing Valves should be located in the piping, so that the Engineer can conveniently stand on the boiler room floor, or control room floor, and from there shift the scale weights which vary the Pressure or Vacuum carried in the heating main. The scale weights to be hung on extension rods of 1/4-in. pipe of proper length so that weights come 6 ft. from the floor.

On very large installations it will be of advantage to provide a separate set of Control Valves for each Main

Application 1 is a manually controlled Differential System using steam at not more than 10 lb. initial gauge pressure. For higher initial pressures see Application 3. Two Sub-Atmospheric Pressure Reducing Valves are used as shown. Valve "A" supplies steam in mild weather. The second valve, "B," supplies steam in cold weather. In extreme weather both valves may be used if necessary.

Application 2 is an automatically controlled system on which a temperature controlled valve "C," operated from a thermostat is substituted for valve "B." The thermostat must be placed in a typical room on the most exposed side of the building at the point most remote from boiler measured along the steam piping. The temperature control equipment may be one of the several commercial types according to the requirements of the building. When such an arrangement is used the valves should be installed as shown.

Application 3 is a manually controlled system on which the source of steam supply is greater than 10 lb. The pressure-reducing valve "D" should be installed as shown.

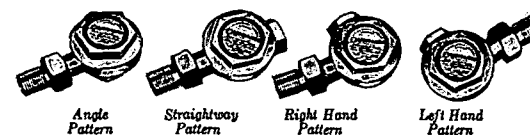
Application 3 may be modified by substituting a temperature control valve for valve "B."

Branch so that the heat to each main portion of the building can be controlled most economically. A separate pump must be used for each zone.

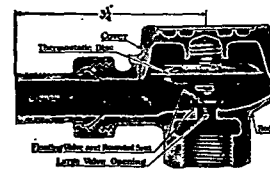
Pressure Reducing Valves can be omitted on low pressure oil, gas fired, and coal fired installations having blower or stoker if each method is controlled by a room thermostat.

Drip traps must always be used on drain points of steam mains whenever Pressure Reducing Valves are used.

DUNHAM DIFFERENTIAL RADIATOR TRAPS



All traps used in connection with the Dunham Differential Vacuum Heating System are known as "D" series. They function uniformly over a range of pressures and temperatures from 25 in. of vacuum to 25 lb. gauge pressure. The accompanying chart shows performance of a Dunham D1 Radiator Trap over this range of pressures and temperatures.



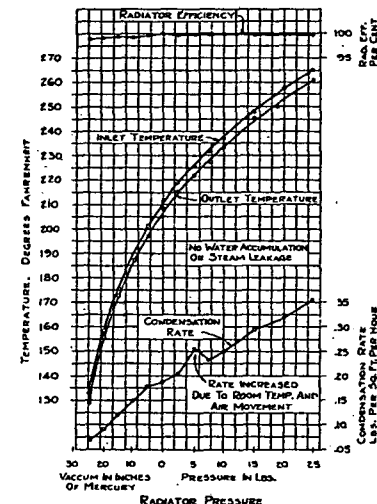
Sectional View of Dunham Thermostatic Radiator Trap

The outlet temperature in this test bore the same relation to the inlet temperature of the radiator over the entire pressure range of 25 in. vacuum to 25 lb. gauge, a pressure substantially 37 1/4 lb. higher than the 25 in. vacuum. Graph shows the constant uniformity of temperature between steam and return lines throughout the entire range of pressures.

The radiator efficiency was consistently high (almost 100 per cent) and there was no steam leakage or water accumulation.

The condensation rate in the 5.0 lb. gauge test increased due to air movement in the room and a low room temperature, the trap responded immediately by passing the increased condensate under this condition without leakage of steam.

The test was conducted on a 3 col. 38 in.—100 sq. ft. radiator.



The Dunham traps conform with the standard dimension of 3 1/4 in. from center of trap to end of union nipple, as adopted by The Heating and Piping Contractors' National Association for 1/4 in. radiator traps.

Float and Thermostatic Traps—"D" Series

25-in. vacuum to 25 lb. gauge pressure.

Sizes are distinguished by size number preceded by a capital "D."

Trap No.	Size of Tapping Inches	Capacity Sq. Ft. Equivalent Direct Radiation	Net Wt. Lbs.	Dimensions, Inches						
				A	B	C	D	E	F	G
D22	3/4	1600	14	11 1/4	6 3/8	9 3/8	1 3/8	3 3/4	3 3/4	5 1/2
D23	1	2800	15	11 1/4	6 3/8	9 3/8	1 3/8	3 3/4	3 3/4	5 1/2
D16	3/4	3600	24	14 1/8	7 7/8	10 1/2	1 3/8	4 1/4	1 1/2	7 7/8
D17	1	5200	24	14 1/8	7 7/8	10 1/2	1 3/8	4 1/4	1 1/2	7 7/8
D18	1 1/4	8000	33	15 1/2	9 3/8	12 1/8	2	4 7/8	1 3/4	9 1/2
D19	1 1/2	11500	33	15 1/2	9 3/8	12 1/8	2	4 7/8	1 3/4	9 1/2
D20	2	14000	42	19 3/4	11 3/8	15 1/2	2 1/4	6 3/8	1 3/8	9 3/4

Capacities given are based upon a condensation rate of 1/4 lb. per square foot of cast iron direct radiation per hour, at a pressure differential of one inch of mercury, which is equivalent to 1/4 lb. per square inch. All traps have right hand female tappings.