

Hoffman Specialty Co., Inc.

Waterbury, Conn.

GENERAL SALES DEPARTMENT

25 West 45th Street :-: NEW YORK, N. Y.

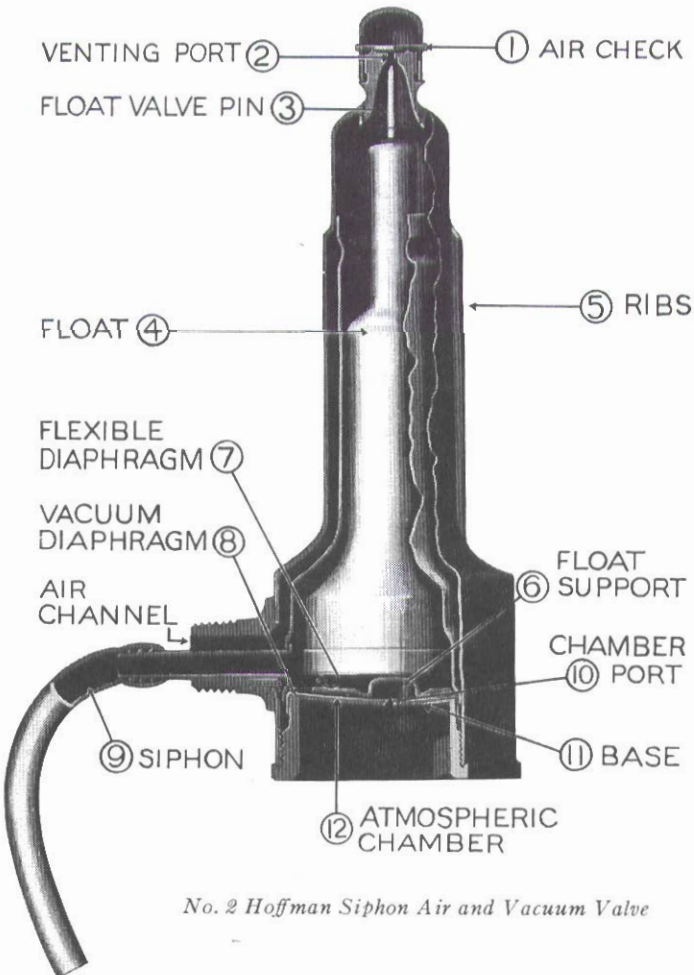
Hoffman Valves and Controlled Heat Equipment

HOFFMAN VENTING VALVES

In the Hoffman line there is a specially designed venting valve for every type of steam heating system. The basic principle used in the design of all Hoffman venting valves is that of an all-metal thermostatic member, with one or more flexible diaphragms, containing a volatile or heat sensitive fluid which causes valve action upon slight temperature changes.

Hoffman valves have a wide pressure range in which they operate with the same degree of accuracy, for the internal fluid pressure in the thermostatic member maintains a constant relationship with the external steam pressures throughout the whole range of pressure for which each valve is intended.

Hoffman valves are automatic, non-adjustable and guaranteed to properly function for a period of five years from date of installation when installed and operated under normal conditions for which designed.



No. 2 Hoffman Siphon Air and Vacuum Valve

HOW THE NEW HOFFMAN No. 2 VACUUM VALVE OPERATES

NORMALLY venting port (2) through which air escapes is wide open until steam comes in contact with the float (4). Then the heat sensitive fluid in the float, the thermostatic member, is changed to gaseous state expanding the flexible diaphragm (7), raising the float and closing vent port.

If the radiator is shut off or for any reason steam contact ceases, the diaphragm contracts, and the float drops. But no air can re-enter the valve because the air check (1) makes the port a one-way street—air can go out but none can come back. So with the continuation of condensation of steam and prevention of air return, a vacuum is formed in the system. Atmospheric pressure exerted through chamber port (10) causes diaphragm (8) to lift the float (4) and keep port closed.

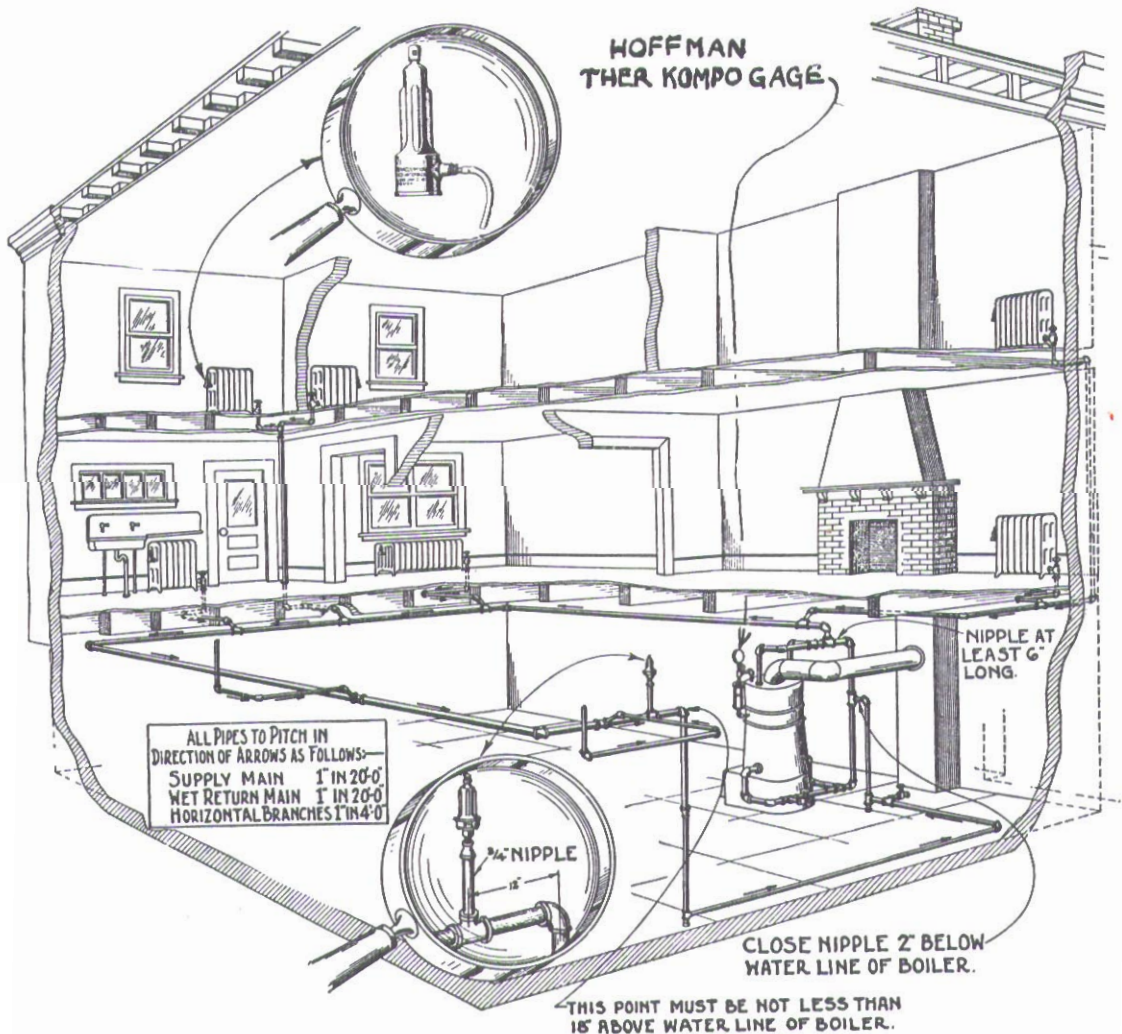
In other words, the air check acts as a vacuum starter, prevents return of air for a short period until the vacuum formed in the valve permits atmospheric pressure, acting through port (10) to force diaphragm (8) upward, raising the float and doubly closing the vent port.

HOW TO VACUUM-IZE A ONE-PIPE STEAM SYSTEM

To enjoy the comfort and economy of this new heating system all that is necessary is to equip the radiators all over the house with these new **No. 2 Hoffman Air and Vacuum Valves**, and if there are one or more air valves on the piping in the cellar, these must also be changed. **The No. 6 Hoffman Vacuum Valve** is best suited for this purpose as it allows those radiators furthest from the boiler to heat up just as quickly as the nearest one.

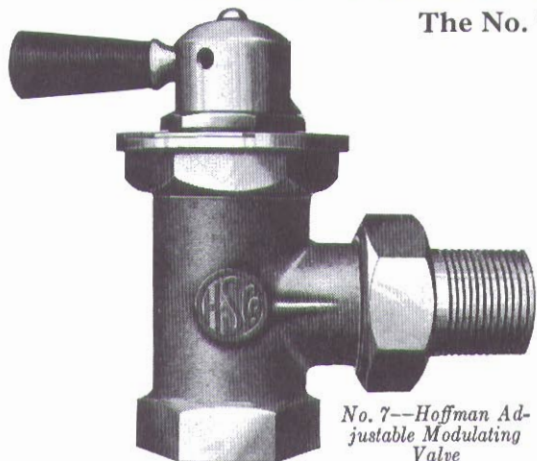
The use of even a single **No. 2 Hoffman Vacuum Valve** on the worst radiator will enable that particular radiator to stay warm after steam pressure has diminished, but with air leaking in at other points complete heating comfort and economy will not be secured unless every valve is a **No. 2 Hoffman**.

Heating contractors and engineers appreciate that while the big air leak in any steam heating system is through the air valves (this leak is stopped by the **No. 2 Hoffman**) there are liable to be other leaks which must be stopped if the system is to be fully efficient. Complete instructions as to what to do and how to do it are sent with the valves and should be carefully observed to get the best service.

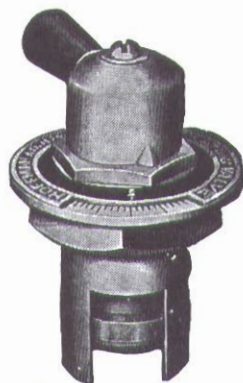


HOFFMAN "CONTROLLED HEAT" EQUIPMENT

The No. 7 Hoffman Adjustable Modulating Valve



No. 7—Hoffman Adjustable Modulating Valve



Showing Rotary Sleeve



Showing Port Opening

For use in Vapor or Vapor Vacuum systems, is made in $\frac{3}{4}$ in. size only, having a range of adjustment up to 200 sq. ft. of direct cast-iron radiation.

After installation, whether the system is in operation or cold, the port of each valve is adjusted for the size of the radiator to which it is attached. Adjustment is simple; loosen a locknut; turn valve handle until proper number of graduations are visible on the dial plate; then tighten locknut. The valve handle may then be moved to admit sufficient steam to heat a quarter, half, three-quarter, or entire radiator. The valve stem stuffing box has a frictionless metallic fibre packing that will last indefinitely and require no attention, giving at the same time, a valve action so free that the pressure of only one finger is required to open the valve.

The No. 7 valve is regularly supplied with lever handle. On special orders, it can be furnished with wood wheel, lock shield, closed top, extension stem and handle, or chain pull.

POSITIONS OF TOP DIAL PLATE FOR VARIOUS SIZES OF RADIATORS



All Graduations exposed
200 sq. ft.

15 Graduations exposed
150 sq. ft.

10 Graduations exposed
100 sq. ft.

5 Graduations exposed
50 sq. ft.



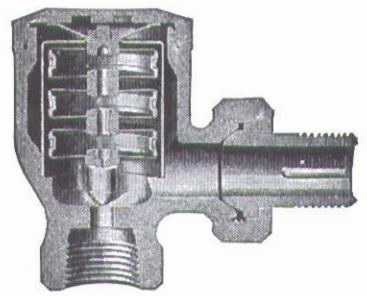
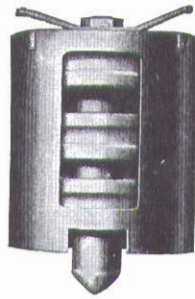
CORRESPONDING POSITIONS OF ROTARY SLEEVE SHOWING PORT AREAS FOR ABOVE GRADUATIONS

The visible adjustment enables the designing engineer and heating contractor to make a final accurate adjustment which compensates for slight irregularities in pipe sizes, failure to ream pipe, installation of extra fittings not foreseen in original layout, etc. The advantages of an adjustable port in forced hot water systems to secure proper balance makes the No. 7 Valve especially adaptable for such use.

Write for Descriptive Circular—Hoffman Controlled Heat



Interchangeable Thermo Member



Sectional View

The Nos. 8 and 9 Hoffman Return Line Valves

These valves are automatic, non-adjustable, thermostatic and relieve all air and condensation without the loss of steam from radiators, pipe coils, indirect radiation, steam mains and risers, steam kettles, sterilizers and other devices where it is desired to get full efficiency and economy without waste of steam.

In service, they have established a reputation for efficiency and consistency of operation with the same degree of sensitiveness under either high or low pressure.

The body of the valve is made of cast steam metal; cap and tail piece are hot brass forgings; the thermostat of a special Hoffman alloy. In continued operation the thermostats will not break, stretch or lose their tension, giving long life and perfect operation.

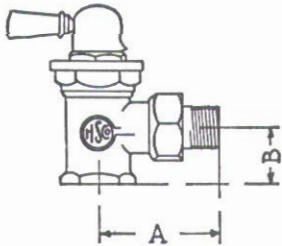
Chief Features

The valve consistently operates under a pressure range from 13 in. of vacuum to 50 lbs. steam pressure. Water at a temperature of approximately 12 deg. less than the temperature corresponding to the steam pressure causes full valve opening and free discharge of condensation.

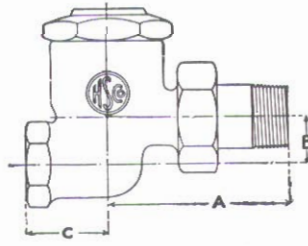
The thermostatic member is removable and may be changed from one valve to another of the same size without adjustment. This feature is appreciated by engineers who require the removal of the thermostat from the valves, until the system is thoroughly cleaned, and likewise by contractors complying with this practice.

The No. 8 Valve has $\frac{1}{2}$ in. pipe connections, $\frac{1}{4}$ in. port and is furnished in Angle, Straightway, Right and Left-hand Offset Patterns. The normal capacity is 200 sq. ft. of cast iron radiation.

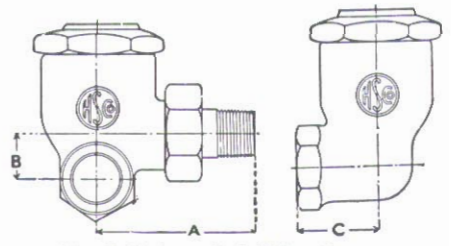
The No. 9 Valve with $\frac{3}{4}$ in. connection is made in Angle and Straightway Patterns only, and is suitable for 600 sq. ft. of cast iron radiation. For pressures up to 15 lbs. valve has $\frac{3}{8}$ in. port, for higher pressures $\frac{3}{16}$ in. port.



No. 7 Angle Pattern



No. 8 or 9 Straightway Pattern

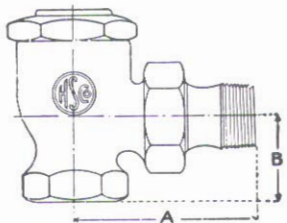


No. 8 Right or Left Offset Pattern

DATA AND DIMENSIONS

STYLE	Size Inches	Diameter Valve Port Inches	Maximum Capacity Square Feet	DIMENSIONS		
				A	B	C
No. 7 Angle.....	$\frac{3}{4}$	..	200	$2\frac{7}{8}$	$1\frac{3}{8}$	...
No. 17 Angle.....	$\frac{3}{4}$	..	200	$2\frac{3}{4}$	$1\frac{1}{2}$	...
No. 8 Angle.....	$\frac{1}{2}$	$\frac{1}{4}$	200	$2\frac{3}{8}$	$1\frac{3}{8}$	...
No. 8 Straightway.....	$\frac{1}{2}$	$\frac{1}{4}$	200	$2\frac{3}{8}$	$\frac{3}{8}$	$1\frac{1}{2}$
No. 8 Offset.....	$\frac{1}{2}$	$\frac{1}{4}$	200	$2\frac{3}{8}$	$\frac{3}{8}$	$1\frac{3}{8}$
No. 18 Angle.....	$\frac{1}{2}$	$\frac{1}{4}$	100	$2\frac{3}{4}$	$1\frac{1}{4}$	...
No. 18 Straightway.....	$\frac{1}{2}$	$\frac{1}{4}$	100	$2\frac{3}{4}$	$\frac{7}{8}$	$1\frac{3}{8}$
No. 18 Offset.....	$\frac{1}{2}$	$\frac{1}{4}$	100	$2\frac{3}{4}$	$\frac{7}{8}$	$1\frac{3}{8}$
No. 9 Angle.....	$\frac{3}{4}$	$\frac{3}{8}$ *	600	$3\frac{3}{8}$	$1\frac{1}{2}$	...
No. 9 Straightway.....	$\frac{3}{4}$	$\frac{3}{8}$ *	600	$3\frac{1}{8}$	$\frac{5}{8}$	$1\frac{1}{2}$

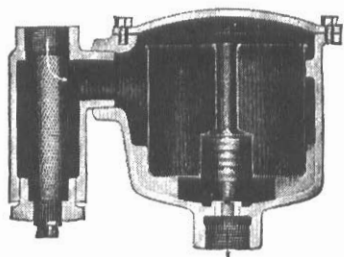
*No. 9 Valve furnished with $\frac{3}{16}$ in. port for pressures above 15 lb.



No. 8 or 9 Angle Pattern

Write for Descriptive Circular—Hoffman Controlled Heat

The No. 12 Hoffman Blast Trap is especially well adapted for draining condensation from:



No. 12 Hoffman Blast Trap

- | | |
|--------------------------------|----------------------|
| Indirect Radiators | Dryers and Drums |
| Blast or "Vento" Stacks | Hot-Water Generators |
| Ends of Steam Mains and Risers | Unit Heaters, etc. |

Where the operating pressure is not in excess of 30 lb. this valve will take care of large amounts of condensation. In functioning it distinguishes between steam, heated air and water of condensation giving free discharge of air and condensation.

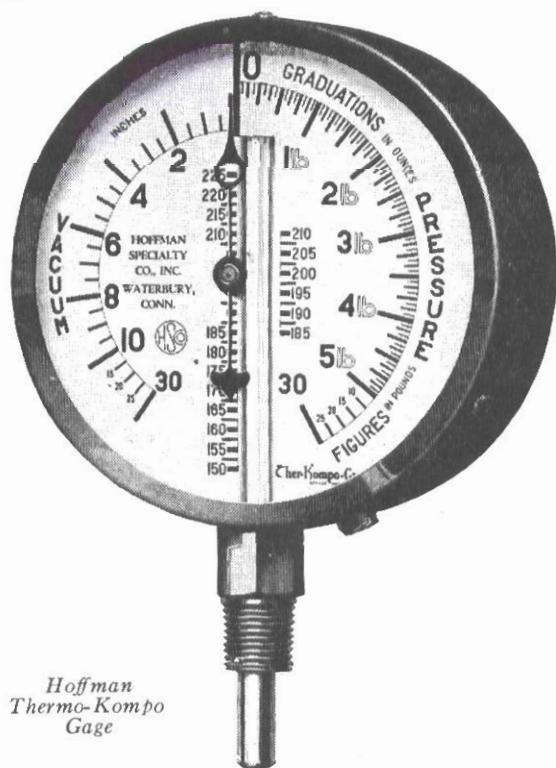
The Trap embodies the desirable feature of open bucket or float traps in that it relieves condensation immediately upon its arrival at the trap regardless of the water temperature. Coupled with the float is a thermostatic member which positively overcomes the chief difficulty with float traps by automatically relieving air as well as condensation from the system.

The normal position of the valve is open and this is held until steam reaches it when closure takes place. If small quantities of condensation flow to the trap the thermostat functions and relieves the water but if larger amounts of condensation, beyond the capacity of the thermostat reach the trap, the float lifts the thermostat from its seat and maximum capacity is obtained.

Table of Nominal Capacities No. 12 Hoffman Blast Trap

Pressure, lbs. per sq. in.....	1/2	1	2	3	4	5
Capacity lbs. per hr.....	800	1,000	1,500	1,800	2,000	2,500
Capacity in sq. ft. of radiation or the basis of 1/4 lb. of condensation per hr. per sq. ft.....	3,200	4,000	6,000	7,200	8,000	10,000

Maximum Operating Pressure, 30 lb. Capacities for over 5 lb. pressure, furnished on application. With Strainer; inlet connection, 1 in.; outlet 1 in. With Strainer; inlet connection, 1 1/4 in.; outlet, 1 in.



Hoffman
Thermo-Kompo
Gage

The New Hoffman Ther-Kompo Gage is used on Hoffman Controlled Heat installations or One-Pipe Gravity Steam Heating Systems, equipped with Hoffman No. 2 Vacuum Valves.

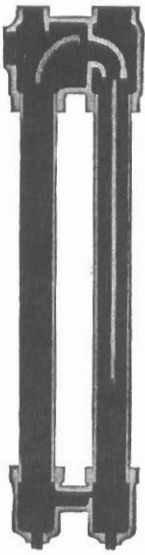
It accurately indicates the temperature of the vapor produced in the boiler, whether operating under pressure or vacuum conditions, measuring pressures up to 30 lbs. and vacuum to 30 in.

The Hoffman Ther-Kompo Gage is made in one style only—with pressed steel case, 5 in. diameter dial pressure and vacuum readings in black and temperature readings in red. Pipe connections are 1/2 in.

When used with the Hoffman Damper Regulator, results in marked fuel economy through more efficient firing of the boiler.

Write for Descriptive Circular—Hoffman Controlled Heat

Hoffman Differential Loop



Hoffman Differential Loop

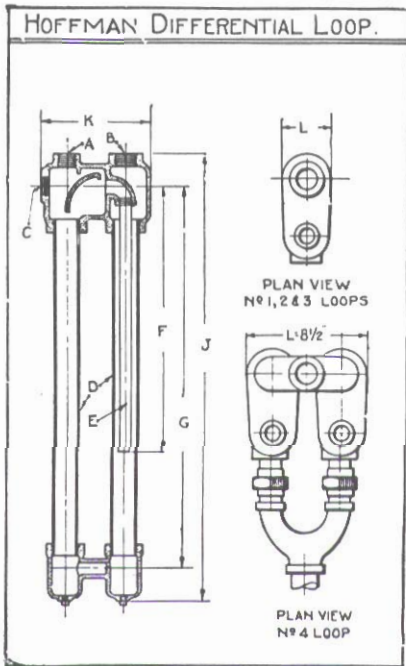
The Differential Loop is the safety device for maintaining a steady water line in vapor and vapor vacuum systems. It is entirely automatic, non-adjustable and has no moving parts to stick at a critical moment.

Through its use water is permitted to rise in the return main a certain predetermined amount when the loop functions, blowing over a small quantity of steam which closes the No. 10 or 11 Valve installed on the loop for venting the system and then compresses the air which is "bottled up" in the return main and builds up a pressure which prevents further rise of water in the vertical part of the return beyond the predetermined amount. As soon as this is accomplished, and the action is almost instantaneous, the loop reseals and no more steam is blown over until the differential pressure is not maintained. It will be readily seen that, by the alternate blowing over and resealing of the loop, a constant differential

pressure will be maintained between the steam main and return main and also that by the maintenance of this differential regardless of how high the boiler pressure goes circulation will take place in a radiator which is turned on with the return main vent closed through loop action.

Differential Loops are made in four sizes, having a capacity up to 15,000 sq. ft. of radiation. For larger systems the No. 4 Loops can be installed in a battery or the return mains divided so as to have their load come within the capacity of standard loops.

No. 1 and No. 2 Loops should not be used where the low point in the dry return is less than 24 in. above boiler water line; with the No. 3 and No. 4 Loops this distance must be at least 30 in.

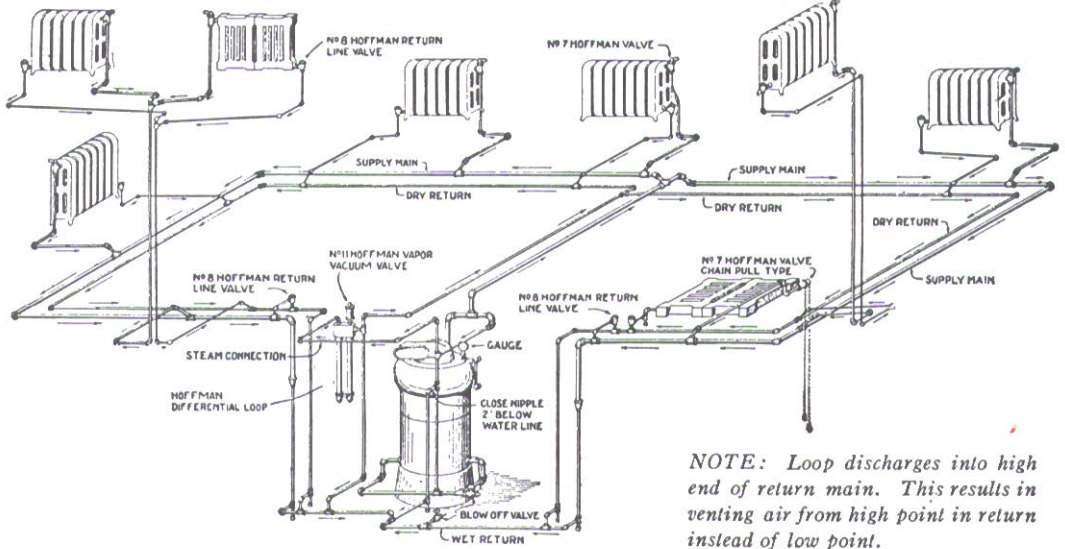


DIMENSIONS AND CAPACITIES OF HOFFMAN DIFFERENTIAL LOOPS

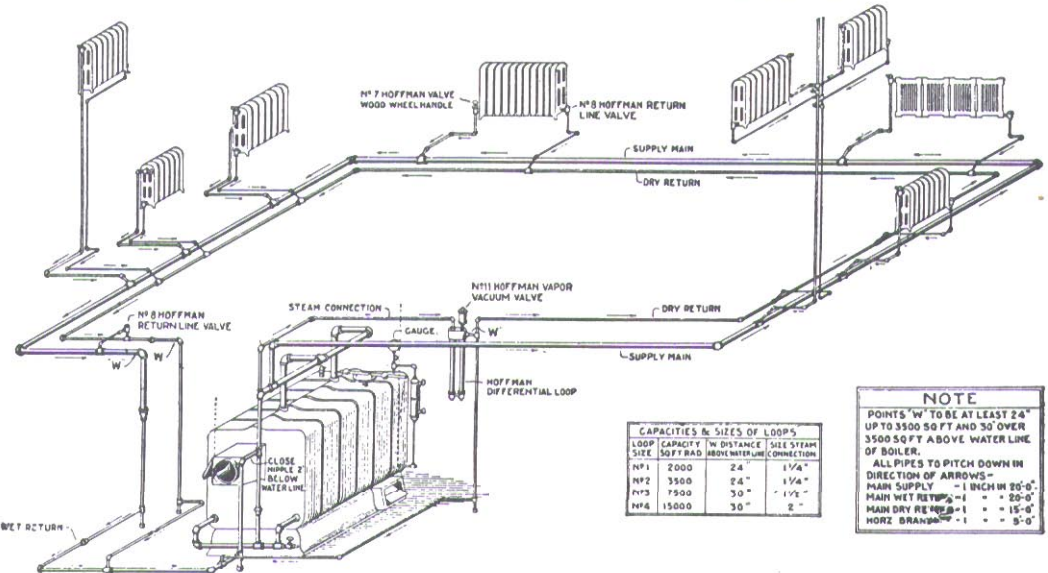
Loop No.	A	B	C	D	E	F	G	J	K	L	Capacity Sq. Ft. Rad.
1	3/4"	1 1/4"	1 1/4"	1 1/2"	1/2"	18 1/4"	26"	30 5/8"	7 5/8"	3"	2000
2	3/4"	1 1/4"	1 1/4"	1 1/2"	3/4"	18 1/4"	26"	30 5/8"	7 5/8"	3"	3500
3	3/4"	1 1/2"	1 1/2"	2"	1"	25"	32"	37 3/4"	10"	3 3/4"	7500
4	3/4"	2"	2"	2"	1"	25"	32"	37 3/4"	10"	8 1/2"	15000

Write for Descriptive Circular—Hoffman Controlled Heat

TYPICAL INSTALLATIONS HOFFMAN "CONTROLLED HEAT" EQUIPMENT

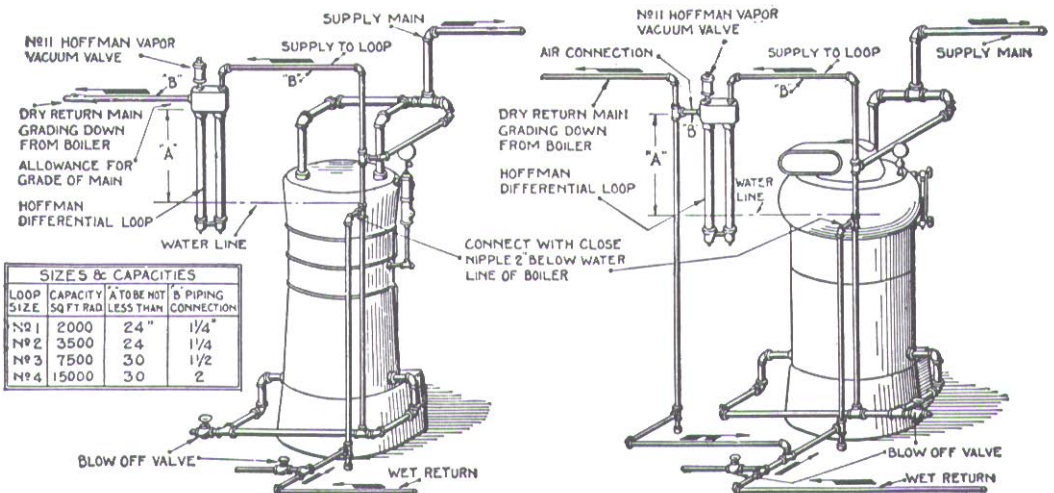


NOTE: Loop discharges into high end of return main. This results in venting air from high point in return instead of low point.



LOOP SIZE	CAPACITY SQ FT RAD	PIPE SIZE IN DISTANCE	STEAM SIZE BELOW BOILER MAIN CONNECTION
Nº1	2000	24"	1 1/4"
Nº2	3500	24"	1 1/4"
Nº3	7500	30"	1 1/2"
Nº4	15000	30"	2"

NOTE
POINTS 'W' TO BE AT LEAST 24" UP TO 3500 SQ FT AND 30" OVER 3500 SQ FT ABOVE WATER LINE OF BOILER.
ALL PIPES TO PITCH DOWN IN DIRECTION OF ARROWS -
MAIN SUPPLY - 1 INCH IN 20'-0"
MAIN DRY RETURN - 1 - 20'-0"
HORIZ DRAINAGE - 1 - 15'-0"
HORIZ DRAINAGE - 1 - 5'-0"



LOOP SIZE	CAPACITY SQ FT RAD	A TO BE NOT LESS THAN	B PIPING CONNECTION
Nº1	2000	24"	1 1/4"
Nº2	3500	24"	1 1/4"
Nº3	7500	30"	1 1/2"
Nº4	15000	30"	2"

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