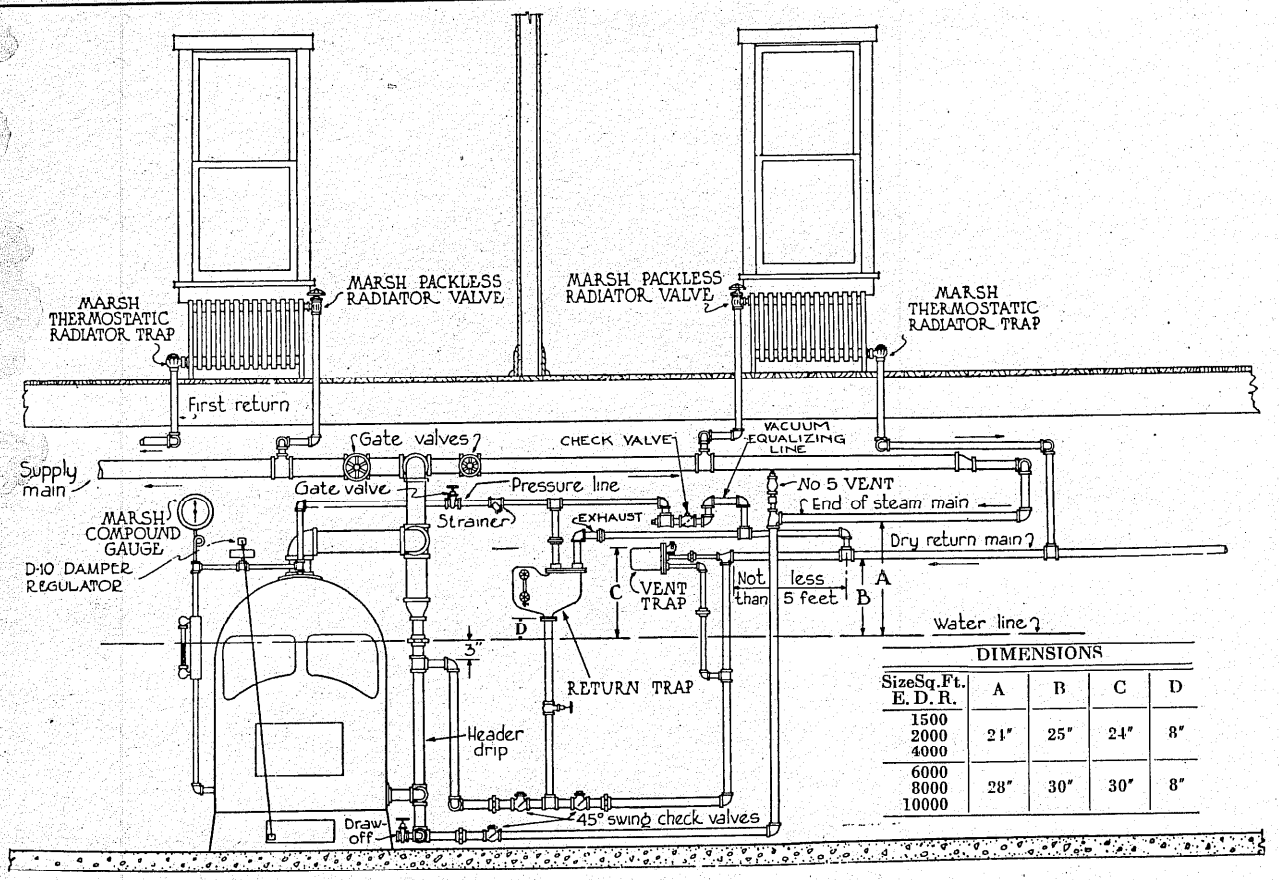


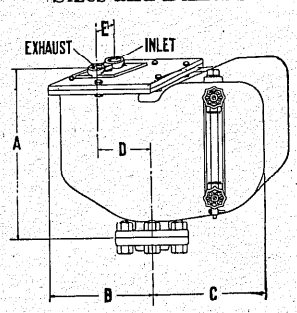
DIMENSIONS

Size Sq. Ft. E. D. R.	A	B	C	D
1500 2000 4000	21"	25"	24"	8"
6000 8000 10000	28"	30"	30"	8"

Detail Drawing of Marsh Vapor System Showing Sizes of System and Correct Location of Marsh Units

Sizes and Dimensions of Marsh Boiler Return Traps

For installations having more than 10,000 square feet of direct radiation, two or more Marsh Boiler Return Traps can be connected in series, details for which will be furnished upon request.



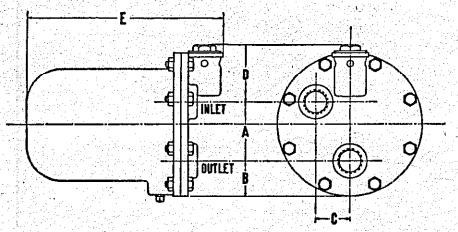
No.	Size Sq Ft. E.D.R.	A	B	C	D	E
10 10-A 10-B	1500 2000 4000	14¼"	8¼"	9⅜"	5¾"	2¼"

Steam inlet ¾". Trap inlet 2". Exhaust ½".

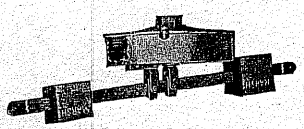
No.	Size Sq. Ft. E.D.R.	A	B	C	D	E	F
10-C 10-D 10-E	6000 8000 10000	21½"	9¾"	11¼"	5⅜"	3⅜"	3⅜"

Steam inlet ¾". Trap inlet 2½". Exhaust ½".

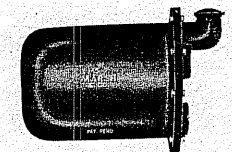
Sizes and Dimensions of Marsh No. 11 Vent Trap



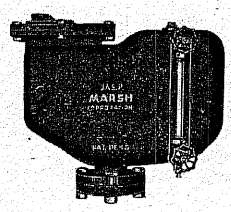
Air outlet	Inlet	Water outlet	A	B	C	D	E
½"	1"	1"	3 7/16"	1¾"	1⅞"	3⅛"	10½"



Damper Regulator



Marsh Vent Trap



Marsh Return Trap

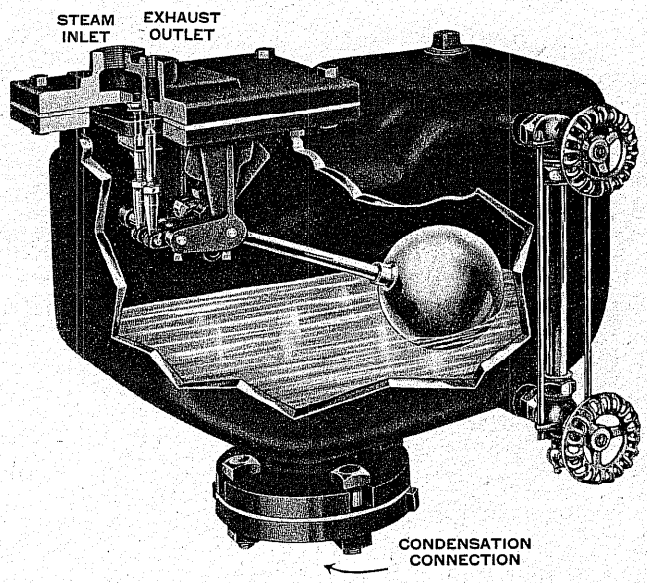
No. 5 Vent

Printed in U. S. A.—10472

Marsh Boiler Return Trap

A BOILER return trap is required on any two-pipe vapor system. It performs two functions—that of returning condensate to the boiler and of maintaining a dry return line to allow free venting of air from the system and radiation at all times. These functions the Marsh Boiler Return Trap performs entirely automatically.

When the pressure in the boiler is lower than the pressure created in the return piping by the head of water in the vertical return piping below the venting point, water of condensation returns to the boiler by gravity. When the pressure in the boiler is higher, it sets up a resistance which, combined with the loop connection, makes it impossible for the water to return to the boiler by gravity. At such times, the Marsh Boiler Return Trap functions to return the condensation to the boiler mechanically and to maintain a constant water level in the boiler.



Boiler Return Trap

A glance at the installation drawing will show how the return main is connected to the boiler. The return trap is installed above the water line and is connected with the lowest level of the return main below the water line. On either side of this latter connection, swing check valves are placed.

Seeking its own level, condensate accumulates in the boiler return trap. A float in the trap rises. By means of a main weight and idler weight, two cam rods are actuated simultaneously. One cam unseats a valve, opening an inlet connected directly with the boiler header. This allows steam to enter the trap. The other cam shuts off an exhaust connection to the return system. The pressure of the boiler has thus been introduced into the trap and makes it possible for the accumulated condensate to flow freely into the boiler.

When the water level recedes, the float and lever actuate the weights and cams in the opposite direction closing off the inlet port from the boiler and opening the exhaust valve. The steam is vented and the cycle begins again.

The cycle is repeated as often as required by conditions in the heating system.

This unit is produced in sizes varying from 2,000 sq. ft. to 10,000 sq. ft. of radiation. For installation having more than 10,000 sq. ft. of radiation, two or more units are used.

Construction of Boiler Return Trap

The body is of cast iron fitted with a companion flange which bolts on the inlet opening. The trap is so designed that when the head is removed from the body, the entire mechanism can be taken out in one operation. The float is of heavy copper. The cast brass *float lever* and connecting rods are pivoted with stainless steel pins to resist rusting or wearing action. The main balance and idler weights are made of cast iron, mounted on the main yoke with stainless steel pins with bronze bushings, and the valve stems, and seats are made of stainless steel. The entire assembly is designed to resist wear and rust.

Important Installation Details

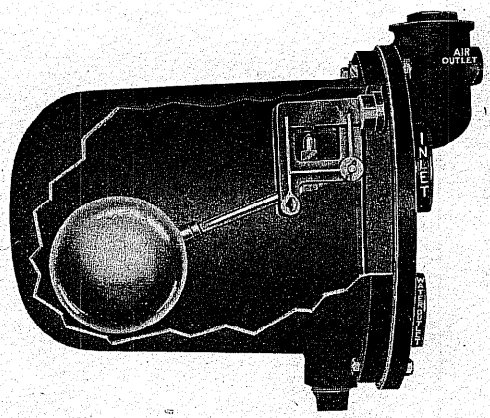
1. This trap should never be installed with the bottom of the trap less than 6″ above the boiler water line.
2. Top of trap must be below horizontal return at point of venting.
3. Always use 45 degree swing check valves at points indicated on installation detail on following page.
4. Steam supply line to trap should be one size larger than steam inlet of trap. Reduce pipe size at steam inlet connection.
5. Trap must be installed level for satisfactory operation.
6. Detailed instructions for installation are furnished with each trap.

Marsh No. 11 Air Trap

This unit vents the air from the return piping. It also vents the air and exhaust vapor from the return trap. A ball float mechanism permits the escape of air and prevents the leakage of water. A vacuum check valve prevents re-entry of air.

This trap is made in one size to handle installations up to 10,000 sq. ft. of radiation. Where more than one Marsh System Unit Equalizer and Boiler Return Trap is used, the same number of air traps is used.

The body is of cast iron and interior mechanism of non-corrosive metals throughout.



Marsh No. 11 Air Trap