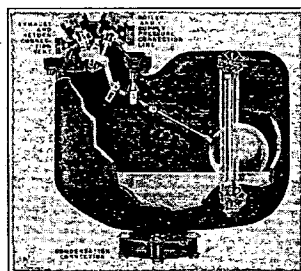


MARSH SYSTEM UNITS

MARSH EQUALIZER AND BOILER RETURN TRAP

The Marsh System Unit No. 10 Equalizer and Boiler Return Trap is the most important automatic element entering into the construction of a Marsh Vapor System of Heating. The entire successful operation of the system depends upon the functions of this Marsh System Unit of assuring perfect circulation throughout the entire heating system and return of water to the boiler.



the return lines, it causes the float to rise until a predetermined point has been reached.

At this point, the float will have risen to such an extent so as to cause the mechanism within the trap to open an inlet port connected directly to the boiler by means of piping to the boiler header. This action of the return trap permits the steam pressure from within the boiler to

pass on through the piping into the trap, thus equalizing the difference in pressure between the trap and boiler, and as the pressures are now the same, the water has sufficient force due to its height above the level of the water line to gravitate into the boiler—the source from which it started in the form of steam.

Construction

The body is of heavy cast iron fitted with a companion flange which bolts on the inlet opening. The head is so designed that when it is removed from the body, the entire mechanism can be taken out in one operation. The cast brass float and connecting rods are pivoted with stainless steel pins to resist rusting or wearing action.

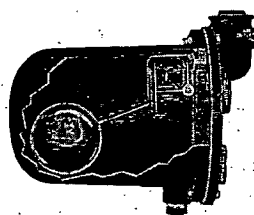
Equalizer Operation

Incorporated in the head construction of the unit is an integral ball check between the steam supply and return connections as shown on the drawing. With this arrangement, should the depth of vacuum in the supply system become greater than within the return system, the integral ball check will open permitting equalization of the vacuum in the supply and return systems.

Return of Water to Boiler

Water in the return system seeking its own level will find its way into the body of the trap, and as it continues to accumulate in

No. 11 AIR VENT TRAP



This trap is designed to provide a positive means of expelling air at the terminus of the return system in the boiler room and at

the same time prevent leakage.

A float mechanism within the trap allows the air to pass from the top of the return line into this trap, and to escape through the air outlet at the top of the trap by means of piping, which extends above the normal water level of the return system.

The ball check valve prevents the air from re-entering the system at this point. As water builds up in this trap, the float rises, closing the air outlet and retaining the water in the return system.

This trap has sufficient air expelling capacity to take care of all size jobs up to



MARSH No. 5 VENT

On vapor systems this vent is the air expelling unit at the ends of steam mains. It expels air until steam has reached

the thermostatic element. When steam reaches this element, it expands upwardly, closing the outlet port preventing vapor from escaping.

This vent is fitted with a float to eliminate the possibilities of water surging and also a vacuum top feature to prevent air from re-entering the system.

MARSH SYSTEM UNITS

MARSH No. 7 AIR ELIMINATOR

The Marsh No. 7 Air Eliminator is another form of air expelling unit used for the same purpose as the Marsh Air Vent Trap, illustrated and described on page 848. It may be substituted with safety where so desired. It is a large free vent for the air at all temperatures, cannot water-log, does not spit or leak water.

The Marsh No. 7 Air Eliminator is equipped with a cylindrical float arrangement to prevent water from surging, and a thermostatic element



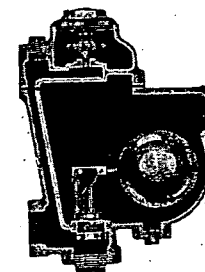
as an additional protection against leakage of vapor steam should it reach this point.

The air port allows free expulsion of air, and has a vacuum top feature to prevent air from re-entering the system. This eliminates the need for a check valve on the air outlet. Made in $\frac{3}{4}$ inch and 1 inch connections and adjusted at factory to operate automatically from below pressure on up to 10 pounds steam pressure.

MARSH No. 8 DRIP TRAP

This trap is continuous in discharge and is designed to quickly remove condensation and air from drip points on steam mains, steam risers, steam coils, or blast heaters, or for any like service within the capacity of the trap.

The design permits a deep water seal on the discharge valve. This water discharge valve is float controlled and located at a low point in the bottom of the trap and air is removed through a thermostatically controlled port in the cap of the trap. The thermostatic member used is our standard assembly as in the No. 1 Marsh Radiator Trap. Normally air is discharged through a port directly to the outlet connections of the trap. In cases where the trap may be required to discharge to a wet return the air discharge may be connected to a dry return from a special open-



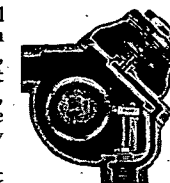
CAPACITIES

Steam Pressure in lb.	Capacities in lb. water per hr.
$\frac{1}{2}$	500
1	900
2	1400
3	1600
4	1800
5	2000
10	3200
15	4000

MARSH No. 12 DRIP TRAP

CAPACITIES

Steam Pressure in lb.	Capacities in lb. water per hr.
$\frac{1}{2}$	350
1	600
2	800
3	1200
4	1400
5	1600
10	2000
15	2800



Designed for removal of air and condensation from short steam mains, branches or risers. Unit heaters, steam coils, etc., are within the limits of the capacity of the trap.

The size and weight of the trap permits its installation in the piping without any other means of support. Condensation is removed through a float operated valve located at the lowest point inside the trap body. Air removal is located in the cap of the trap. Air passes through a passageway

and out through the trap outlet.

Body of trap is of cast iron and all interior parts are of forged steam bronze, copper and monel metal. The thermostatic member of the air by-pass is interchangeable with the member of the standard No. 1 Radiator Trap.

This type of trap is particularly adapted to Unit heater installations.