

**:- DUNHAM :-  
SPECIALTIES**



**|| C.A. DUNHAM Co. ||  
|| MARSHALLTOWN, IOWA. ||**



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# C. A. Dunham Company

MARSHALLTOWN, IOWA

NEW YORK

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Branch Offices in All the Principal Cities

(This Bulletin supersedes and takes place of all information covering same subjects heretofore published by us.)

== SUBJECT ==

## The Dunham Blast Trap and its Application

OTHER BULLETINS WHICH MAY BE HAD ON APPLICATION ARE

- BULLETIN No. 1—The Dunham Vacuo Vapor System of Heating—What it is—How it Operates.
- BULLETIN No. 2—Advantages of Steam for Heating—Why the Dunham Vacuo Vapor System is Superior.
- BULLETIN No. 3—How to Install the Dunham Vacuo Vapor System of Heating.
- BULLETIN No. 4—How to Operate the Dunham Vacuo Vapor System of Heating.
- BULLETIN No. 5—The Dunham Radiator Trap and its Application.
- BULLETIN No. 7—The Dunham Air Line Valve and its Application.
- BULLETIN No. 8—Dunham Traps for Intermediate Pressure Service.
- BULLETIN No. 9—The Dunham Reducing Pressure Valve and Vacuum Pump Governor.
- BULLETIN No. 10—Some Buildings where the Dunham Systems of Heating are now Installed.
- BULLETIN No. 11—The Dunham Vapor System.
- BULLETIN No. 12—The Dunham Packless Inlet Valve.
- BULLETIN No. 13—How to Install the Dunham Vapor Heating System.



## THE DUNHAM BLAST TRAP

Ask manufacturers of Blast Heating Coils what difficulty they most frequently encounter in the operation of their apparatus and they will say without hesitation, "the difficulty of properly draining our coils of water of condensation and air." Ask us, as manufacturers of steam traps for all purposes, what service is the most difficult for any low pressure trap and we will also answer without hesitation, "Blast heating coil service."

The reason for this is two-fold. First, the condensation of steam in blast coils is extremely rapid, forming large quantities of water to be drained off, and second, the large and irregular internal conformation of the coils provides isolated places for air to collect and remain at the cost of heating efficiency.

A trap, to properly drain blast coils of water and air without attendant loss of steam, must depend for its operation upon a motive force that works in one direction when steam is present, and in exactly the opposite direction when air and water are present. In addition to this, such a trap must be durable, noiseless in operation and capable of automatically adjusting itself to changing steam pressures within the coil.

However, it should not be assumed from the above that the successful operation of the coil is dependent wholly upon the successful operation of the trap. If the trap is improperly installed or if it is attached to a type of coil that possesses inherent defects of its own, then the coil and not the trap should be blamed for the results obtained. The greatest care should be exercised in selecting the proper type of coil as well as the proper type and size of trap to work in conjunction with it. After selection is made, all possible care should be taken to install same in proper relation to each other. That is, so that the natural laws of drainage, etc., are observed.

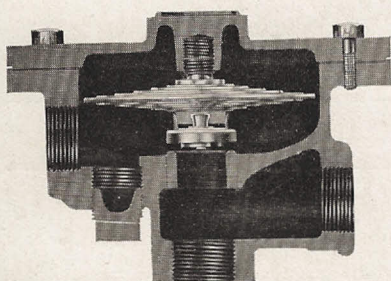
The Dunham Blast Trap, shown on next page, was gotten out by us in response to an insistent demand from users of the well-known and eminently successful Dunham Radiator Trap, for a trap of capacity large enough to drain



## THE DUNHAM BLAST TRAP

Blast Heating Coils. The sale, likewise the success, of this Blast Trap has met our most sanguine expectations. Thousands of them are in use in all parts of the country. This trap operates upon precisely the same principle as the Dunham Radiator Trap. In fact, it is simply a large Dunham Radiator Trap with body made of cast iron instead of bronze. The working parts are made of the same material as the working parts of the Dunham Radiator Trap.

**How it Operates** The corrugated metal diaphragm, seen suspended from the cover casting, contains a combination of volatile fluids which vaporize readily at the temperature of steam.



When steam surrounds the diaphragm, the fluids vaporize, forming an internal pressure which causes the two walls of the disc to separate and force the flat valve down to the seat. Air or water following at a

slightly lower temperature condenses the vapors previously formed by the steam, the diaphragm collapses and the trap opens. The air and water then pass out, steam follows, the walls of the diaphragm separate and the trap closes again.

Note particularly that the Dunham Blast Trap has in its construction, no loose working parts to rattle and make noise, and no sliding contacts about which grease and dirt can find lodgment. Note, too, that its working parts are constructed of the highest grade of non-corrosive metal, which is a bronze product that is acknowledged by everyone versed in materials of construction to be the best steam metal known. Observe further the flat valve which the rigidity of the diaphragm permits being used. This latter point is worthy of the most careful consideration and one which will appeal most strongly to those engineers who have had experience and who know the objections, such as rapid wear, easy obstruction by foreign matter, etc., to a valve made in any other form than one perfectly flat and smooth. The first Dunham traps were made with cone and round valves, and for that matter we can supply such shaped valves



## THE DUNHAM BLAST TRAP

now, but while the construction of this trap permits it, we, by reason of experience had in the past, recommend, by all means, the use of a flat valve such as all of our low pressure vacuum traps are supplied with.

The Dunham Blast trap can be used on pressures up to ten (10) pounds. Its discharge can be into the atmosphere direct, or into a vacuum or atmospheric return line. Many of them are in use draining mains and risers in plain gravity systems of heating. Some are used as grease traps, but the biggest use for them has come from the drainage of blast coils. **Always specifically designate when ordering blast traps for riser or steam main drips.**

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### CAPACITIES

Size	Pipe Connection	Capacity Sq. Feet Direct Radiation	Weight Pounds	List Price
3/4 in.	3/4 in.	1500	12 1/2	\$18.00
1 in.	1 in.	3000	21	29.00

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**Remarks:** Be sure and reduce blast service to equivalent direct radiation by multiplying the actual surface of the coil by a factor ranging from 4 to 10, usually about 8, depending upon the temperature and volume of the air that is blown over the coils.

These traps can be installed either angle or straightway.

**Important** With the Dunham Blast Trap, which this bulletin describes, we insist upon furnishing prospective users of same with detail drawings of just how to install the trap in each instance. We have had experience in draining all kinds of blast heaters and have found that the application of our Blast Trap to one type of coil may not be the proper application at all, to another type. We charge nothing for our detail drawings, so all the prospective user has to do is to put his problem up to us and let us recommend what connections are best adapted to the particular instance in question. Upon application, a list of our regular drawings covering installation of the Dunham Blast Traps to standard makes of Blast coils will be furnished you.