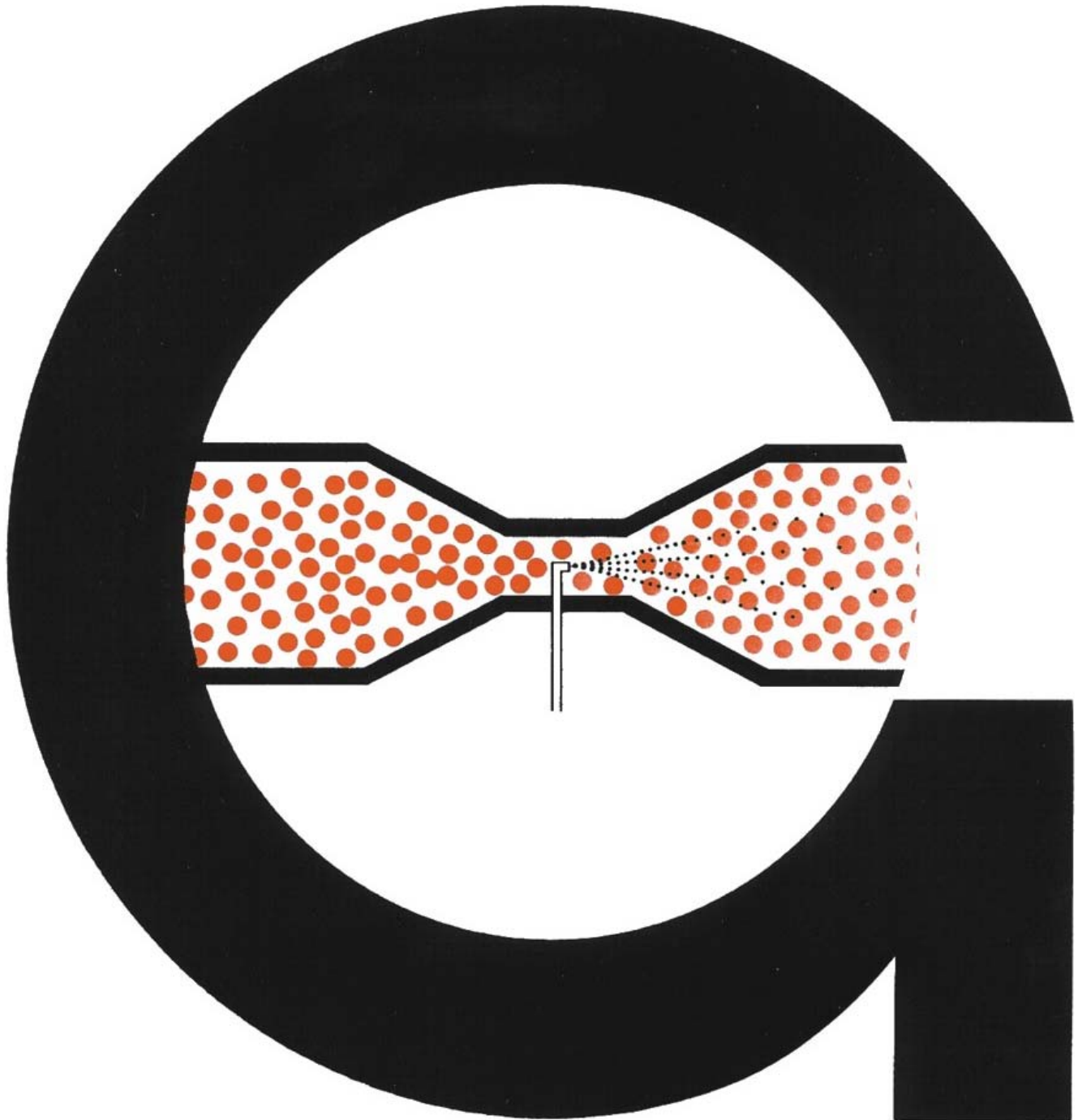


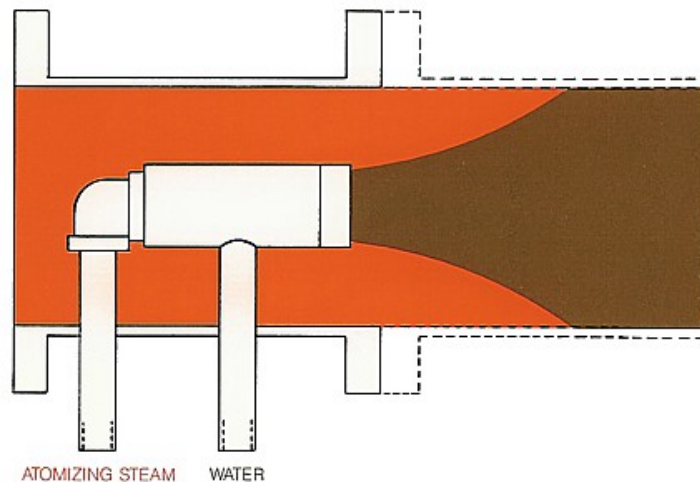
# Graham Desuperheaters



a mist that mixes directly with steam in a controlled pattern that avoids the erosion and reduced cooling effect caused by water contact with sidewalls. And it is not necessary that water supply pressure be greater than desuperheater steam line pressure.

Three basic types of Graham desuperheaters are available in a range of sizes and materials of construction to meet a wide variety of application requirements. All are manufactured under strict quality control, which makes possible our no-nonsense guarantee. Alloys used, and hydrostatic test techniques employed, are those appropriate to the specified service conditions and the applicable codes.

All Graham desuperheaters are designed for operation under automatic control.



## Type SA

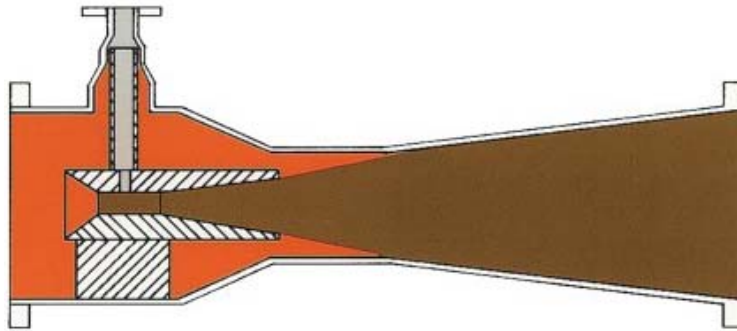
An uncomplicated, low-cost steam atomizing desuperheater for stable operation in applications where steam flow rates can vary considerably. With automatic control, this design offers stable and effective operation with turndown ratios as high as 50:1. This is possible because a small quantity of steam at a minimum of 1-1/2 times desuperheater line pressure is used for atomization, so that creation of an efficient mixture of steam and water mist is not dependent on main steam line velocity nor on water flow rate. As with other Graham desuperheaters, water pressure need only be equal to desuperheater steam line pressure.

During turndown operation, water will tend to settle out in the exit pipe due to lower pipe line velocity, and must be removed in a downstream trap-out pot. This is particularly important if proper control is to be maintained at approach to the saturation temperature.

This design is ideal for combination pressure reducing and desuperheating operations, and is recommended whenever high pressure steam for atomizing is available. Pressure drop is negligible. Provided for clamping between flanges, for welding into piping, or flanged.

As the pioneer of the modern steam jet ejector, Graham has an unequalled background in the design and application of the venturi – the key to stable and efficient operation of the atomizing type of steam desuperheater. Graham’s desuperheaters are backed by the extensive application know-how Graham has acquired in more than 40 years of serving the process industries with vacuum and heat transfer equipment, and backed by the organization Graham has built for prompt, effective service, and our uncompromising guarantee of performance in accordance with specifications.

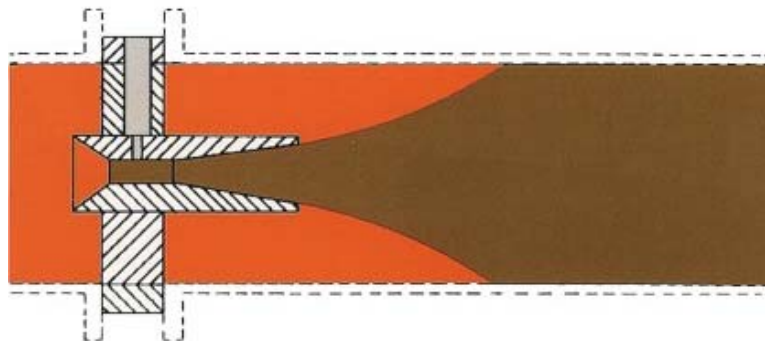
Graham desuperheaters reduce the temperature of superheated steam for process use and operation of auxiliaries through evaporative cooling by direct contact with water. As opposed to spray-type desuperheaters, expert design of the venturi and combining sections produces



### Type SV1

A highly flexible general-purpose venturi desuperheater for steady or variable flow application. Water is supplied at the small venturi throat where it is atomized by the accelerated steam flow. Thorough mixing and evaporation, with consequent reduction of steam temperature, occurs when this mist joins the main stream in the throat and diverging section of the main

venturi. Pressure is substantially restored in the diffuser section by conversion of velocity to static head, so pressure drop across the desuperheater is low. Water pressure need only be equal to inlet steam pressure. Designed for flanged connection to steam piping, with no separate support required. May be installed horizontally or vertically with flow upward.



### Type SV2

A simple and low cost venturi desuperheater, with lowest steam pressure drop since it has a straight-through steam passage. For applications in which steam flow does not vary significantly. Flanged for direct connection in steam piping, with no separate

support required. May be installed horizontally, or vertically with flow upward. As with other Graham desuperheaters, because of the fine atomization of water, there is no erosive effect on the pipeline walls.



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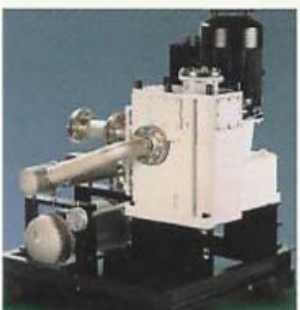


Plate heat exchangers



Steam surface condensers

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