

## ADCATHERM FRECO FLASH STEAM HEAT RECOVER

### DESCRIPTION

The Adcatherm Freco – flash steam heat recovery unit – is a skid mounted package unit to facilitate heat recovery from flash steam, condensate or both.

The Freco is specially recommended for heating a continuous flow of fluid, such as make-up water to a boiler feed water system.

Non-continuous flow applications may require additional recirculation, relief valves, or other devices, to avoid system damage due to overheating and consequent overpressure.

It is known that the condensate return and its recovery is beneficial and ensures a remarkable energetic efficiency. However, the condensate, which is initially at high temperatures, ends up expanding and losing most of its energy through the formation of flash steam. On the other hand, feed water temperatures higher than 90 °C to the boiler feed pumps when coming from atmospheric vessels will normally cause cavitation on the pumps with all the consequent damages.

The Freco system prevents this problem since it is installed downstream of the pumps, using the high pressures which can be found there, allowing the condensate heating above 100 °C, without the existence of any boiling, and naturally eliminating the chances of cavitation.

### MAIN FEATURES

Different types of materials and designs available, according to the application.

**OPTIONS:** Atmospherically vented units, to avoid extra back pressure in the condensate return system.

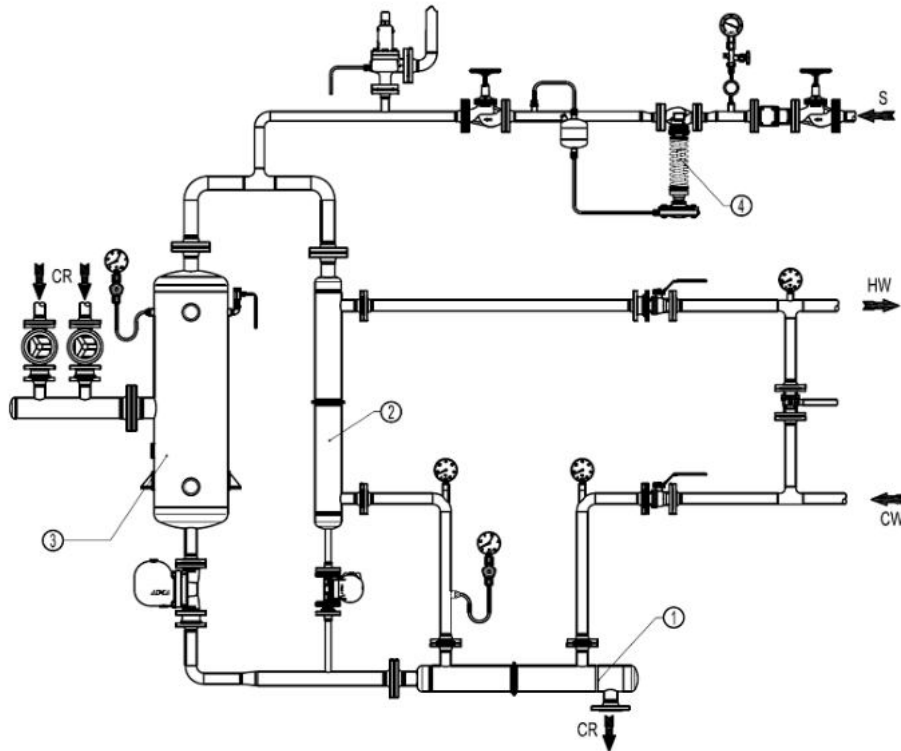
**USE:** Steam, water, hot condensate and other fluids compatible with the construction.

### ORDER

**REQUIREMENTS:** Condensate flow rate and temperature.  
Make-up water flow rate and temperature.  
Operating pressures.  
Steam boiler(s) capacity and operating pressure.



## TYPICAL INSTALLATION



The condensate return (CR) is expanded on a flash vessel (3). The flash steam which is produced there and the remaining condensate are then directed to the respective heat exchangers (1 e 2) where, in the meanwhile, the pressurized feed water (CW) is heated (HW) before it passes to the economizer or is directly introduced in the steam boiler (it is recommended to install a by-pass from CW to HW).

The final condensate will then be recovered to the condensate tank, not being at this stage sufficiently hot to cause the feed water overheating.

A pressure reducing station (4) may be considered to ensure the thermal stability of the system.

