Tesi

TOWER ECO SYSTEM INJECTION

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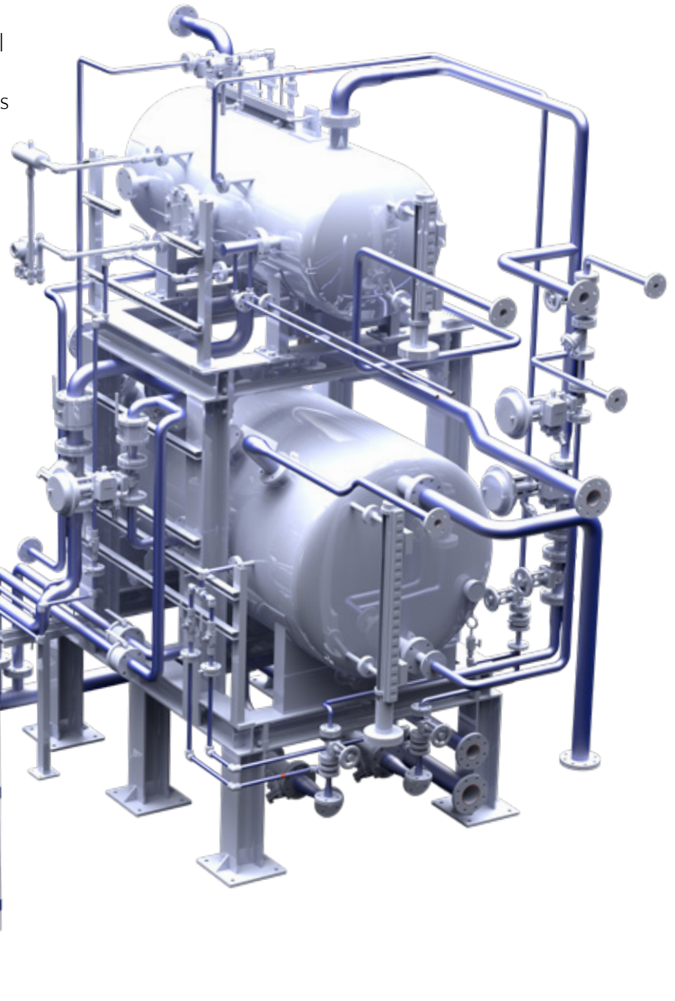
Tower eco system injection

Industry steam production requires a big amount of energy.
During last years boilers manufacturers tried to improve efficiency of their systems using several technological solutions (diathermic oil, smoke-tube, smoke-tube with economizer and so on), in order to reach efficiency up to 95% referred to fuel LHV.

During 2018 boilers efficiency reached another step. Thanks to recovery technologies currently efficiency values raised up to 97,5%.

In order to reach constantly this values of efficiency, it is necessary to allow boiler to work with stable operating conditions, specially regarding condensate thermophisycal properties. If we refer to continuous industrial processes, we find very few systems with the above mentioned operating conditions, this means that it is necessary to provide additional auxiliary systems in order to create ideal operating conditions. Typically auxiliary systems have several disadvantages like big impact on plant layout, expensive devices to add and difficulties in interfacing with boiler control panel.



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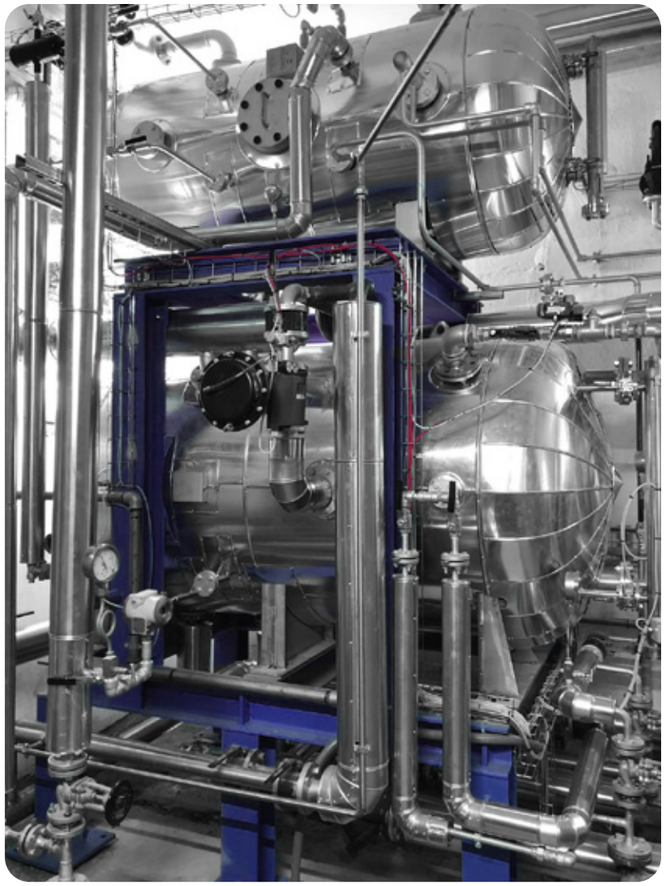

Mevas basing on years of experience and collaborations with biggest boilers manufacturers, developed Tesi (Tower Eco System Injection).

Tesi could be adapted to any type of condensate system for new generation boilers, with very low layout impacts and reduced additional costs for its installation, due to its skid packaging.

Tesi's support structure is certified according to EN 1090 standards, and have been verified by FEM analysis.

Our Tesi system is simply adaptable to each plant configuration (heat recovery systems, water pre-heating systems and any other condensate-based utilities) without substantial process pipings modifications.

Tesi is provided with an independent control PLC able to manage all operating phases separately from boiler logics.

This drive to faster start-up activities and better failures diagnosis.

Another cost-reduction advantage is the remote assistance, provided in order to continuously monitoring and to speed-up interventions in case of malfunctioning.

Tesi control system can acquire signals from boiler control panel and from DCS, and its HMI is completely customizable according to customer's requirements.

Tesi is the best solution to increase the efficiency of your steam production.

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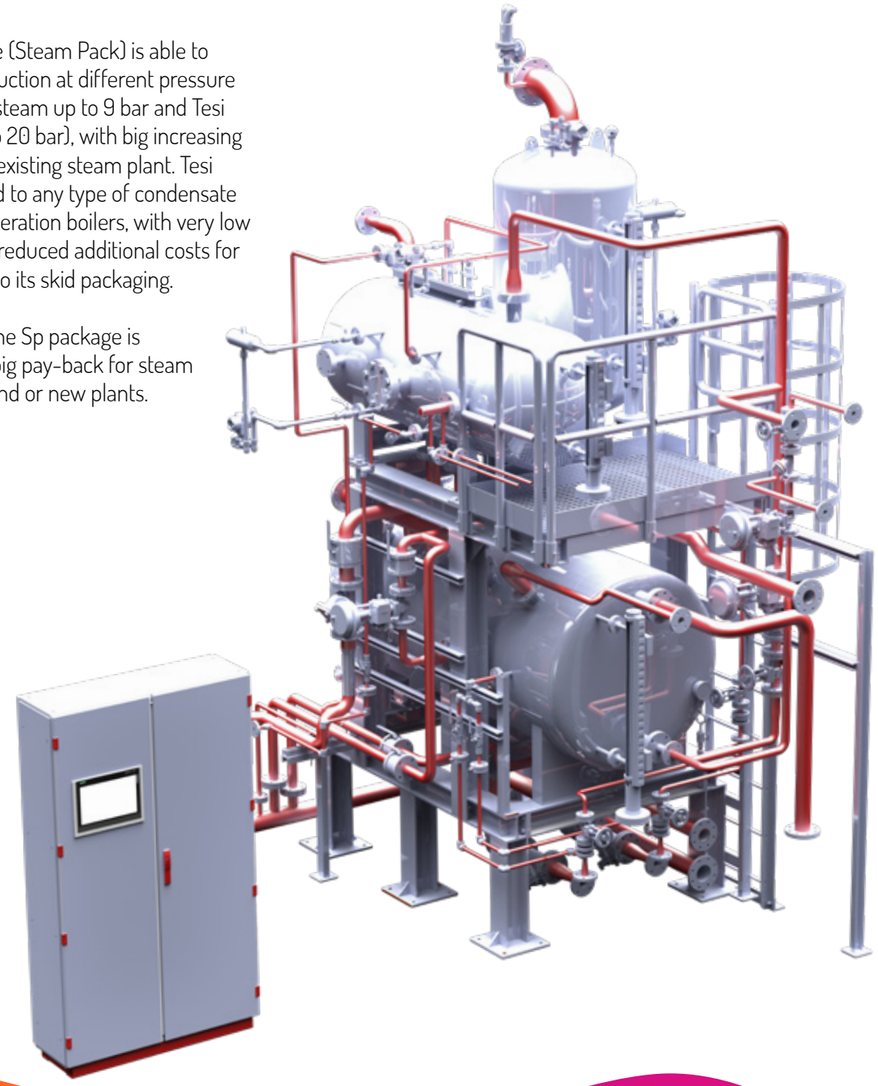
Tower eco system injection _ Steam pack

Industry steam production requires a big amount of energy.
Tesi Sp is the efficiency solution to obtain steam from a recovery system.

The high versatility of Tesi allow, by adding the Sp package (Steam Pack), the use of enthalpy flows coming from a primary process (e.g. hot fumes extracted from the paper process, exhaust gas from turbo-gas, etc.) in order to produce steam, like a real recovery boiler.

The Tesi Sp package (Steam Pack) is able to provide steam production at different pressure levels (Tesi SpL for steam up to 9 bar and Tesi SpH for steam up to 20 bar), with big increasing of the efficiency of existing steam plant. Tesi Sp could be adapted to any type of condensate system for new generation boilers, with very low layout impacts and reduced additional costs for its installation, due to its skid packaging.

The installation of the Sp package is characterized by a big pay-back for steam system rebuilding and or new plants.



Performance Table.

Maximum power of single element	Specification
Maximum power of single element	120 kW
Minimum power	12 kW
Typical excess air at maximum power	30 %
Turndown on air	1:5
Fuels:	-
Natural gas	PCI = 9 - 10 kWh/Nm^3 ρ = 0,6 kg/m^3
Propane	PCI = 26 kWh/Nm^3 ρ = 1,5 kg/m^3
Gas pressure at nozzle :	-
Natural gas	80 mBar
Propane	33,89 mBar
Air pressure drop over module	9,3 mBar
Maximum temperature upstream burner	600 °C
Maximum Temperature Downstream Burner	1000 °C
Maximum Combustion Temperature	300 °C
Velocity Across the Burner	10 - 15 m/s advised 5 - 25 m/s min-max
Module Dimensions	115 x 115 mm
Flame Length from Stabilisation Plate	2000 mm

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The installation of the Sp package is characterized by a big pay-back for steam system rebuilding and or new plants.

A typical case is represented by the integration of Tesi SpH within a paper process, where on average it is possible to guarantee a payback up to 12 months;

Tesi is provided with an independent control PLC able to manage all operating phases separately from boiler logics.

This drive to faster start-up activities and better failures diagnosis. Another cost-reduction advantage is the remote assistance, provided in order to continuously monitoring and to speed-up interventions in case of malfunctioning.