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Category	
HEAT EXCHANGE SYSTEMS	FLASH VESSEL
PRESSURE REDUCING SYSTEMS	SEPARATORS
CONDENSATION RECOVER & RETURN SYSTEMS	STEAM TRAPPING STATIONS
CONTROL AND REGULATION SYSTEMS	CONDENSATION RECOVERY
FEEDWATER TANK MIXING COOLER	SAMPLE COOLERS

ARI-Systems

SYSTEMS, VESSELS AND MODULES FOR THERMAL PROCESSES

System Solutions

THUMBNAIL/IMAGE		SERIES	
Heat Exchanger System			
	Both ARI-ENCosys® systems are built on a stainless steel frame. The safety devices which DIN EN 12828 requires (or acc. to country regulations) to be installed in heat generating systems are selected and integrated according to the system's heat capacity. The use of smart control technology ensures that the upstream flow temperature is maintained at precisely the set value. When a safety component trips, the primary energy is reliably shut off and the system is transferred to an operationally safe condition.	ENCosys®	Energy -efficient steam pressure control
		■ Energy-efficient solution ■ CO2 reduction through up to 15% less steam consumption	
		■ No flash steam– no water hammer! ■ Compact design	
	The heat capacity, materials to be used, design of control valves, etc. are individually adjusted to the local condition according to the customers application. If necessary, the systems are equipped with actuators in acc. with DIN EN 14597 (temperature control devices and temperature limiters for heat generating systems).	ENCosys®	Fast steam-side power control
		■ Fast reaction to load changes (discontinuous processes) ■ Efficient control for processes	
		■ Robust and operationally reliable design thanks to shelland-tube heat exchanger ■ Engineering – Sizing – Design – Commissioning – our one-stop-shop philosophy!	

With energy-efficient steam pressure control for heating systems or fast steam-side control for process applications

Temperature control in a process – safe design – we handle it!

Pressure reducing systems



The **PREsys®** systems reduce an inlet pressure (primary pressure) to a constantly adjustable outlet pressure (secondary pressure) for various consumers.

The pressure is reduced either by a **self-acting regulator** or by a control valve with pneumatic actuator and digital positioner.

The pressure reduction systems are calculated and **designed exactly according to the operating conditions**.

The materials, nominal diameters, system components and safety equipment are designed **specifically for the customer in compliance with the harmonised regulation**.

A control cabinet with compact controller (ARI process controller) can also be part of the scope of delivery.

PREsys®

- Precise engineering and process-safe design
 - Customized design

- No thermal shocks due to line drainage

- Selection and sizing according to process engineering requirements

- Plug & Work complete system

- Precise and simple setpoint adjustment

- Engineering – Sizing – Design – Commissioning – our one-stop-shop philosophy



Assembled as a complete unit

Pressure reduction in safe hands – we handle it!

THUMBNAIL/IMAGE		SERIES	
Compact condensate recovery and return system			
	The material and size of our systems are designed specifically for the customer according to the operating data and the local space conditions. By means of hydrostatic level detection, the collected condensate is returned by multistage centrifugal pumps. The control cabinet and valves are also part of the system. The CORsys® E condensate return systems are rectangular (TAW profile design) or cylindrical (upright/lying).	CORsys® E	■ No cavitation due to the use of low-NPSH pumps ■ Compact base frame construction with pump module
			■ Safe level measurement & pump control ■ Plug & Work
			■ High system safety even in the event of pump failure (overflow)
			■ High stability even with rectangular tanks due to TAW profile design
			■ Protected against dry running and flooding
	Rectangular tanks in compact design are welded directly to the pump plate on a steel or stainless steel base frame. The systems can be designed with a nonpressurised or pressurised container greater than 0.5 bar(g) in accordance with the PED 2014/68/EU with CE marking. Please enquire about the approvals valid in your country by contacting the company responsible for you. Optionally, we insulate the systems. To increase energy efficiency, we recommend using the re-evaporation through an exhaust vapour condenser.		■ Engineering – Sizing – Design – Commissioning – our one-stop-shop philosophy!

For collecting and returning condensate, for reuse in the boiler house.

Electrical recirculation of condensate – we handle it!

THUMBNAIL/IMAGE		SERIES	
Compact condensate recovery and return systems			
	The condensate produced is collected in a cylindrical tank above the condensate pump before it flows into the mechanical condensate pump where it is subsequently conveyed back to the boiler house in combination with the motive medium (mainly steam, alternatively compressed air). The systems are completely pre-piped and mounted on a stainless steel base frame.	CORsys® M	For sterilisation and air humidification as well as for use in the food industry, e.g. for the production of milk powder
			■ Process steam, hot water or heat transfer oil is used as the primary medium (energy supply) to generate the pure steam from demineralised water.
			■ All components, fittings and field instruments on the "pure" side are made of austenitic stainless steel. The tanks comply with the PED 2014/68/EU and are customised.
			■ Compact solution in horizontal design ■ Durable system with maintenance-free valves
			■ High safety due to permanent conductivity monitoring ■ Long service life due to welded tubes in the tube plate
	The CORsys® M systems are particularly suitable for use in potentially explosive areas that are subject to EX protection (ATEX zone) ■ Compact design ■ Applicable in ATEX zone ■ No power supply required ■ Engineering – Sizing – Design – Commissioning – our one-stop-shop philosophy		

With mechanical condensate pump for the return of condensate

Pure steam generation – we handle it!

THUMBNAIL/IMAGE		SERIES
Control and Regulation System		
	In connection with the ARI-Systems installations, our customers also have the option of obtaining the control and regulation technology through ARI.	Individual control cabinet construction – we handle it!
	For this purpose, the required control cabinets are adapted to the needs of our customers.	■ Individual design ■ Touch panel or LCD display
	We offer a wide range of options, from the simple standalone controller to the full-fledged PLC with operation and visualisations on a touch panel as well as communication via various bus systems.	■ Signal transmission via various bus systems, e.g. Profibus, Profinet, BAC Net and many more.
Feedwater Tank		
	Boiler feed water is preheated and kept at set temperature in the feed water tank before it enters into the steam boiler (open feed water tank approx. 104°C / 0.2 bar). In addition, inert gases such as oxygen and CO2 are expelled from returning condensate to protect the steam boiler from corrosion.	Feedwater processing – we handle it!
	In the counterflow principle, the returning condensate is introduced at the highest point of the deaerator dome.	Centrifugal pumps feed the thermally processed feed water to the steam boiler/evaporator.
	The steam flowing in the opposite direction binds the inert gases and ejects them. The feed water is kept at set temperature in the feed water tank directly via a steam lance or via steam injectors.	■ Safe degassing (CO2 and O2) ■ Removable (flanged) deaerator dome
	The steam supply for discharging the inert gases is realised by an additional steam connection at the lowest point of the deaerator dome or on the top of the feedwater tank.	■ High operational safety ■ Plug & Work

THUMBNAIL/IMAGE		SERIES	
Mixing Cooler			
	The prescribed temperature for discharge into the public sewage networks is a maximum of 40°C (depending on the country).	Mixing coolers for cooling hot waste water – we handle it!	
	A mechanical temperature controller regulates the flow rate of the cold water required for cooling.	For cooling hot waste water (boiler water from blowdown and desalination processes)	
	The waste water cooled to the target temperature is discharged into the waste water network as waste.	■ Compact design ■ Smoothly controlled cold water supply	
	The design and construction of the mixing cooler are carried out in consultation with the plant representative and in consideration of the local conditions.	■ No thermal shocks ■ Includes controller without auxiliary power	
Flash Vessel			
	The re-evaporation is fed into a steam network that is operated at a lower pressure than the injected condensate.	Flash vessel – we handle it!	
	Condensate flash vessels are ideal components for increasing energy efficiency in industrial plants that require different steam and condensate pressures for production.	To use the re-evaporation energy	
	Function: The incoming high-pressure condensate automatically expands in the flash vessel to the lower pressure level of the downstream consumer.	■ Reduced operating costs	
	The resulting re-evaporation is supplied to the consumer in terms of energy. The remaining low-pressure condensate is fed via a float steam trap, CONA® S, to the steam and condensate circuit or to another flash vessel.	■ CO2 saving	
Steam Trap Stations			
	The condensate produced is discharged through the ARI steam traps, which are precisely designed for the amount of condensate produced, and fed directly or indirectly via condensate recovery systems to the steam-condensate circuit.	Discharge of condensate – we handle it!	
	The design and dimensioning of the steam traps takes particular account of thermodynamic processes such as re-evaporation and pipe velocity.	For draining steam users, separators and manifolds as well as for conventional pipeline drainage	
	The steam trap stations are manufactured as a pre-assembled unit, with bypass if required, in the material to be considered.	■ Completely assembled Plug & Work unit ■ Safe construction	
	The design and operating principle of the steam traps are specified for the corresponding applications and operating data	■ Many additional options available	

THUMBNAIL/IMAGE		SERIES	
Separators			
	By draining off the water droplets, the service life of the downstream valves and components, such as control valves or pressure reducing valves, is considerably increased. A cyclone separator is a pressure-bearing vessel, designed in accordance with PED 2014/68/EU, in which the steam flow is diverted into a rotary motion. Due to the centrifugal force that occurs, the water droplets are flung against the outer wall of the separator and discharged downwards	High-performance separator – we handle it!	
		To separate the water droplets from the saturated steam	
		■ Approx. 98% degree of dryness due to cyclone design ■ Low pressure loss due to large-volume jacket	
		■ Safe discharge of condensate	
Sample Coolers			
	A sampling cooler is used for sampling hot, pressurised, liquid media. Due to the counterflow principle, the medium to be extracted is cooled down with the help of cold water, so that there is no risk of scalding for the operating personnel. Correct values of the medium can then be determined. Sample coolers are made exclusively of stainless steel.	To cool a media sample for further analysis	
		■ Compact design	
		■ With cup holder ■ High-quality stainless steel design	
Condensate Recovery			
	Condensate collecting vessels are used for the central collection of various condensates. These are collected in a cylindrical tank and returned to the boiler house via mechanical lift pumps. Steam or compressed air are used as the motive medium.	CONLIFT® / CONA®P	By means of the motive steam pump Series: ARI-CONLIFT® or pump trap ARI-CONA® P
			■ Versatile, suitable for all load cases ■ Powerful due to large lifting volume
			■ Easy to handle due to low filling head ■ Energy-saving due to automatic function without electrical energy
			■ Service-friendly due to maintenance work without dismantling the pipelines ■ Durable due to internal parts made of stainless steel and wear parts made of hardened stainless steel