



Hotels



*Sport-
facilities*



Hospitals



WATER

health from the tap

DeltaLegio
the legionellakilling systems

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heat exchangers - hot water systems - district heating stations

DeltaLegio

Hot Water Systems with an integrated thermal disinfection mechanism

Preventing Legionellas within your hot water circulation system

DeltaLegio is a proprietary reliable hot water heating system aimed at preventing the growth of Legionellas in your water piping systems. Legionella is a pathogenic bacterium which can be destroyed by thermal treatment within the hot water tank. As a result, fully disinfected water enters the pipework to your taps.



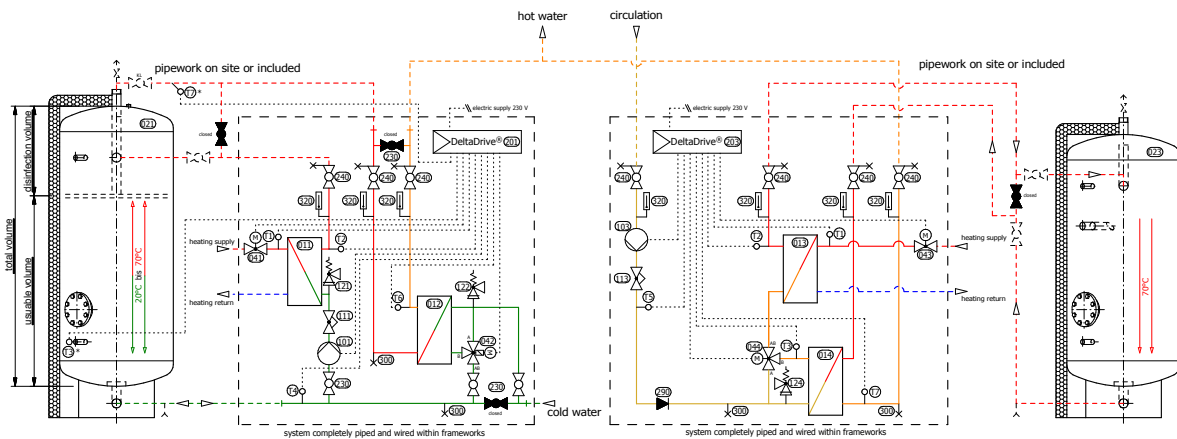
The system is designed to reduce hardness scaling leading to more economic running systems. During times of no water demand, the circulating water is continuously disinfected. DeltaLegio-Systems are simple and easy to service and are suitable as well for new as for existing buildings.

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DeltaLegio-Systems are custom-designed, this means

- specific to customers demand and requirement
- stainless steel material and our production methods lead to highest hygiene standards
- Cost-effective



DeltaLegio-Systems operate in four steps:

1. The incoming cold water is first heated up to a disinfection temperature of at least 70 °C
2. The heated water in the disinfection tank is recommended to stay for at least 10 mins
3. The disinfected legionella-free water is then cooled down to the desired operation temperature controlled by a motorized three-way valve
4. Complete disinfection of the returning circulating water, reheated up to 70 °C and kept up to 10 minutes within the disinfection room of the hot water tank too

Construction details for any DeltaLegio-System:

1. All pumps are running thermotdrive controlled mechanisms - most economic operation mode
2. Pipework is completely insulated = minimized heat losses
3. Mounted vibration free in a durable framework, piped and wired with all top quality accessories, ready to use

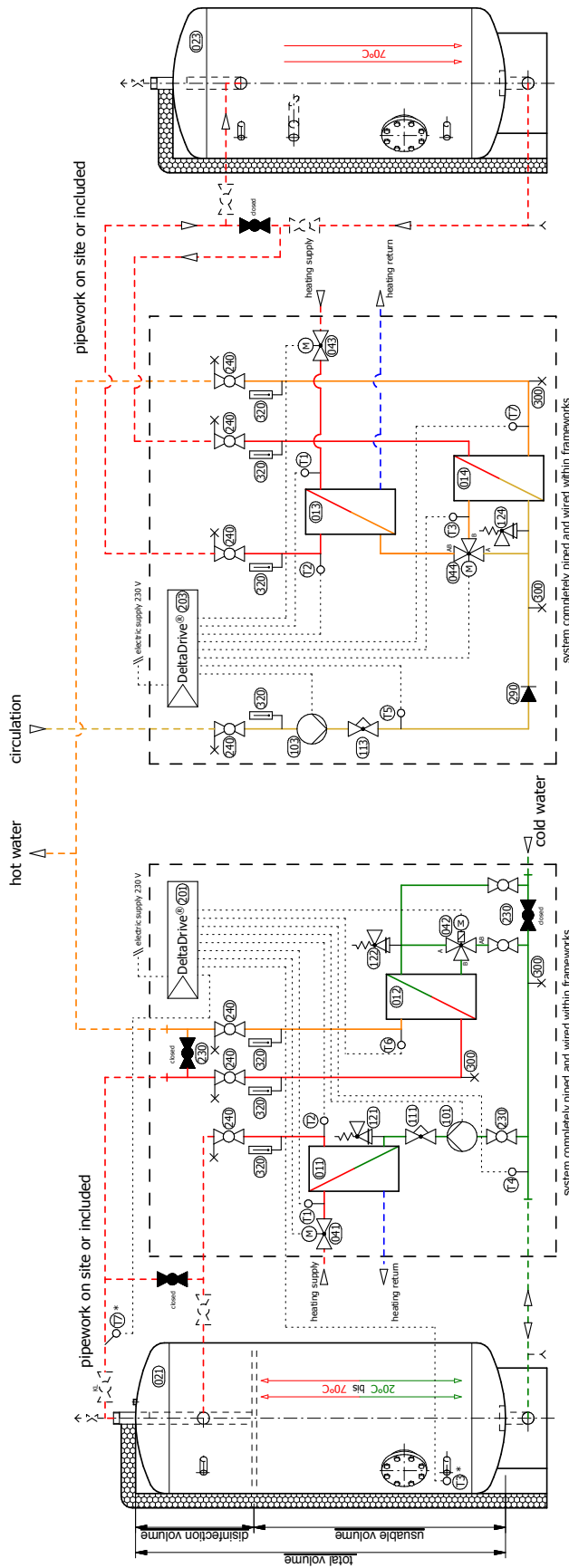
Based on proper planning, performance, and monitoring, Legionella are essentially destroyed by our DeltaLegio-Systems. We have excellent references from several hundred customers with installations of our system. We also have more than 20 years experience of designing, construction, and building legionella-destroying systems for i.e. Hospitals, Hotels, Old-People-Homes, Sport-facilities, Army-Barracks, Prisons, and all kind of shower rooms.

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DeltaLegio System

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- 203 DeltaDrive controller
- 043 temperature regulator circulation
- 044 temperature regulator circulation chilling
- 103 circulation pump
- T1 temperature heating supply circulation
- T2 temperature reheating circulation
- T3 temperature chilling circulation
- T5 temperature circulation return
- T7 temperature hot water circulation

- 201 DeltaDrive controller
- 041 temperature regulator loading
- 042 temperature regulator chilling
- 101 charging pump
- T1 temperature heating supply
- T2 temperature loading
- T3* temperature loading ON
- T4 temperature loading OFF
- T6 temperature hot water chilling
- T7* temperature hot water storage tank

- 121 safety valve loading
- 122 safety valve chilling
- 124 safety valve chilling/circulation
- 230 ball-valve
- 240 ball-valve with sampling valve
- 290 non-return valve
- 300 draining
- 320 thermometer

- 011 hot water generator
- 012 hot water chiller
- 013 circulation flow re-heater
- 014 circulation flow chiller
- 021 hot water storage tank with disinfection volume
- 023 hot water disinfection tank circulation
- 111 setting/balancing valve loading
- 113 setting/balancing valve circulation

- cold water supply 10°C
- hot water to taps 60°C
- circulation 55°C
- heating supply 75°C
- heating return

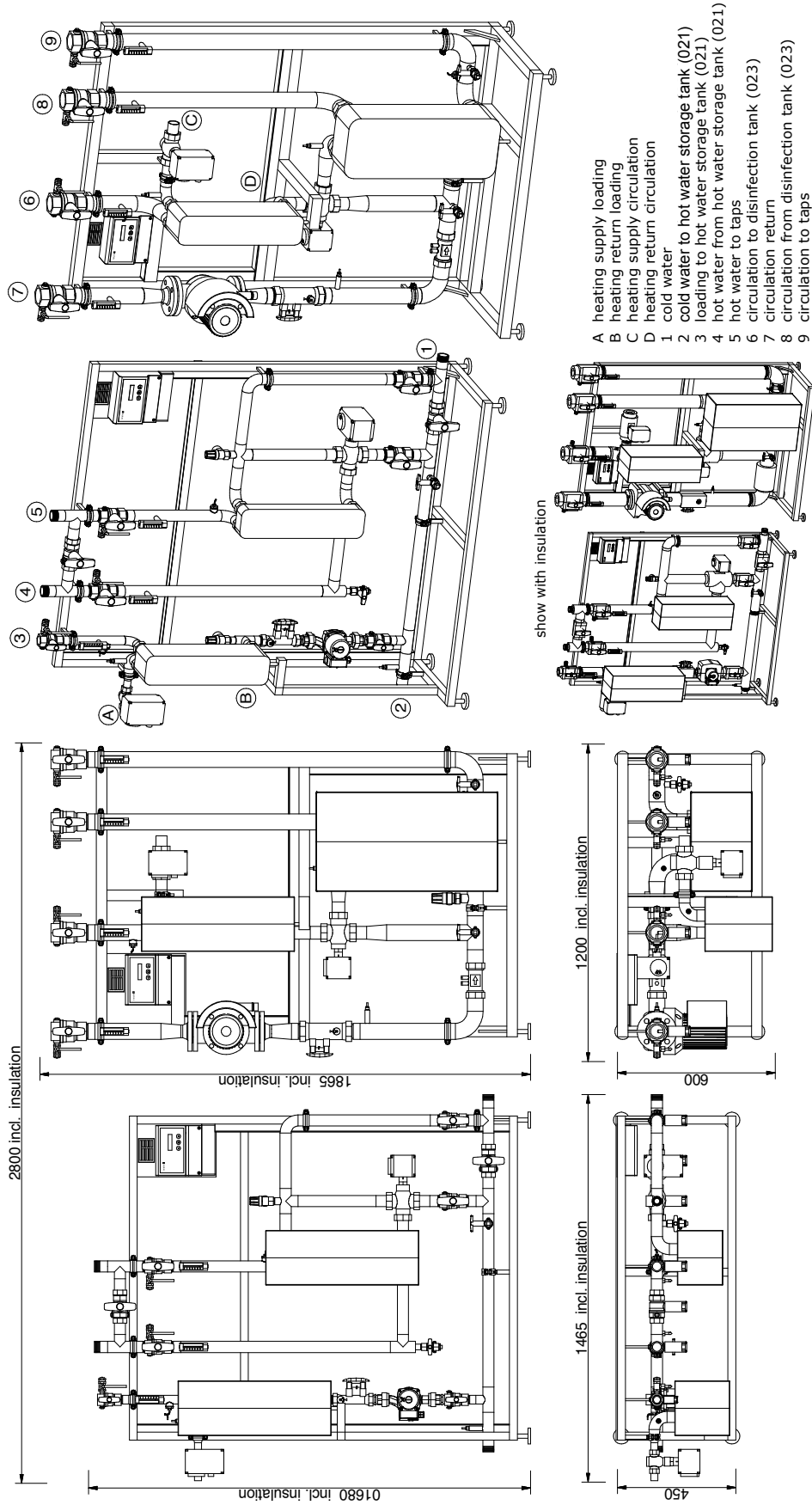
----- on site or when piped separately packed
safety valve drain pipe not included

DMS Legionella Killing Hot Water System

Serie DeltaLegio®

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DeltaLegio System (example)



DMS Legionella Killing Hot Water system - Example

Serie DeltaLegio®

heat exchangers - hot water systems - district heating stations

Position	Quantity		single price Euro	total price Euro
		<p>DMS-Legionella Killing Hot Water System Series - DeltaLegio - System</p> <p>hot water generator with legionellae killing device, shown/ designed acc. to flow-diagram Drawing-No.: _____ with continuous disinfection of total quantity of circulation water</p> <p>Killing of legionellae by heating to disinfection temperature of at least 70 °C Stationary dwell time within disinfection volume of storage tank 5 to 10 minutes</p> <p>Cooling down by hot water chiller and mixed to desired operating temperature 45 to 55 °C without any loss of energy and therefore no danger of scalding at the taps</p> <p>Continuous disinfection of total quantity of circulation water by reheating to disinfection temperature by separate heat exchanger and keeping in the disinfection volume of the storage tank</p> <p>LK-units inside painted frame construction pipework of inert gas welded and additional glass bead blasted stainless steel 1.4571 (ANSI 316 TI) (no flexible pipes acc. to hygienic requirements!)</p> <p>Pipes and valves not insulated</p> <p>Glass covered flow diagram mounted into framework</p> <p>Primary pipework and electric wiring on site</p> <p>Storage tanks and heat exchangers with all necessary internals, connections, hand holes, and complete removab- le and recyclable insulation</p>		

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Position	Quantity		single price Euro	total price Euro
		<p>capacity datas:</p> <p>heating capacity _____ kW medium _____ water/steam* temperatures _____ °C flow rate _____ l/h total system head loss _____ kPa charging flow rate _____ l/min peak flow rate _____ l/min circulation flow rate _____ l/min total contents _____ l total head loss hot water system _____ kPa measures of frame work: H x W x D _____ x _____ mm weight _____ kg max. operation pressure primary _____ bar secondary _____ 10 bar max. operation temperature primary _____ °C secondary _____ 95 °C</p> <p>Type: L - _____</p> <p><u>System consisting of:</u> 1 pc.</p> <p>DMS hot-water-generator designed as braced plate heat exchanger Type: PS-LG _____</p> <p>1 pc.</p> <p>DINOX-D hot water-storage-tank Type: LAS _____ LK hot-water-storage-tank with legionellae killing device with specially built- in parts guaranteeing to keep designed disinfection time constructed and built according to DIN 4753 part 1, stainless steel material quality 1.4571/1.4404 (ANSI 316 TI), butt seam welding – no crease, pickled and neutralized, internal flow rate buffer of perforated stainless steel plate, incl. 100 mm fleece insulation plastic covered</p> <p>usable contents: _____ l disinfection volume: _____ l diameter incl. insulation: _____ mm height: _____ mm weight: _____ kg connections: cold/hot water _____ FM / DN charging _____ FM / DN hand hole _____ DN</p> <p>____ pc.</p> <p>DINOX-D hot-water-disinfection tank* - circulation as described above Type: LAS _____</p> <p>contents: _____ l diameter incl. insulation: _____ mm height: _____ mm weight: _____ mm connections: cold/hot water _____ FM / DN charging _____ FM / DN hand hole _____ DN</p>		

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Position	Quantity		single price Euro	total price Euro
		<p>1 pc. motorized Water temperature regulator two-/three-way valve*, according to heat exchanger (Pos. 1) Type: _____</p> <p>1 pc. Charging pump material: stainless steel/bronze 220 V 60 Hz 400 V three phase* Type: _____</p> <p>1 pc. Setting/balancing valve setting range: _____ - _____ l/min Type: TACO-Setter: _____</p> <p>1 pc. DMS hot-water chiller designed as braced plate heat exchanger Type: PS-LG _____</p> <p>1 pc. Motorized hot water mixing valve material: gun metal, adjustable temperature range: 30-80 °C Type: _____</p> <p>1 pc. Motorized hot water mixing valve temperature control and adjust circulation flow, designed as de- scribed above Type: _____</p> <p>1 pc. Setting/balancing valve setting range: _____ - _____ l/min Type: TACO-Setter: _____</p> <p>1 pc. Circulation pump material: stainless steel/bronze 220 V 60 Hz / 400 V three phase* Type: _____</p> <p>1 pc. DMS circulation flow re-heater designed as braced plate heat exchanger as described above Type: PS-LG _____</p> <p>1 pc. Circulation water temperature regulator as described above Type: _____</p> <p>1 pc. DMS circulation flow chiller designed as braced plate heat exchanger as described above Type: PS-LG _____</p> <p>2 pc. DeltaDrive microprocessor controlled *paint out not applicable details regulations for temperatures – motor valves and pumps</p>		

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Position	Quantity		single price Euro	total price Euro
		<p>Internal stainless steel pipework equipped with:</p> <p>combined non-return/shut off valves, DVGW-certified</p> <p>easy going non-return valves, DVGW-certified</p> <p>safety valves, TÜV-certified</p> <p>water sampling valves</p> <p>draining-valves</p> <p>thermometers for industrial purposes quality-class 1.0</p> <p>temperature sensors</p> <p>Total system price:</p>		

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Basis to design hot water systems with thermal disinfection for Hospitals, Old-people-homes and Hotels

Date: _____

Consulting engineer/Company: _____

Project: _____

To design the Legionellae killing hot water system with thermal disinfection

DMS-DeltaLegio- System

Type: _____

We used the following details:

1. Number of beds _____

2. Number of 1-bed-rooms, _____ with a tub _____ with a shower
 1-bed-rooms, _____ with a tub _____ with a shower
 multi-bed-rooms, _____ with a tub _____ with a shower

3. Therapy department

_____ bath tubs with _____ l contents _____ -operations /h* /day*

other facts: _____

4. Restaurant/cafeteria

Quantity of meals at main eating time: _____

other facts: _____

5. Laundry

yes no

hot water demand for each operation: _____

max. washing operations within 1 h: _____

6. Other users _____

7. Pipework-material

	galvanized	copper	synthetic	stainless-steel
cold water pipes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
hot water pipes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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