technotrans

power to transform

The eco.line series

The efficient ones!

eco.line



Efficient technotrans temperature control units

Appreciated around the globe:

our product portfolio.



Cold-water temperature controllers



Compact water chillers



Industrial cooling equipment



Free cooling systems



Central cooling systems



Water treatment systems



Mold cleaning

Cooling and water supply systems

HotCooled solutions –

in a unique temperature spectrum.



Innovative, efficient, sustainable.



Flexible Installation



directly installed at the consumer. Visualization on the device.



Process monitoring with vortex or Ultrasonic measurement

factory fitted to the temperature control unit (also retrofittable)

water distributor

Temperature control units



Basic standard temperature controllers



Innovative standard temperature controllers



Highly efficient premium temperature controllers



Temperature controllers with water distributors



Customised premium temperature controllers

Temperature control machines





Customised premium temperature control machines

Temperature control systems





Variothermal temperature control systems

We have the perfect solution for you!

Our temperature control units are divided into four product lines: **base.line**, **high.line**, **eco.line** and **flex.line**. These temperature control units differ essentially in their operating concept with regard to comfort, analysis functions, and the efficiency technology that is being applied.
The temperature controller series of the **base.line**, **high.line** and **eco.line** is largely preconfigured with extensive features and can be customized with individual options.
The performance range of the preconfigured temperature controllers includes units with a heating capacity of up to 36 kW, a flow rate of up to 230 l/min and a media temperature of up to 180 °C.
In the **flex.line** series, the temperature controller can be individually and flexibly configured on request with extensive features and numerous options.

The performance range of the flexible temperature controllers includes units with a heating capacity of up to 72 kW, a flow rate of up to 350 l/min and a media temperature of up to 350 °C.

A special feature of almost all standard technotrans temperature control units is the longlife heater with zero-loss heat transfer. Together, all four product lines and both degrees of individualisation stand for high quality and reliability, as well as the "MADE IN GERMANY" label.

The "longlife" stainless steel heating cartridges used in the **high.line** and **eco.line** come with an additional 10-year long-term guarantee.



Our product lines and their key features!

base.line

The inexpensive ones!

In terms of its efficiency and user-friendliness, the **base.line** series is in line with the current „simpler" market standard which is based on peripheral pumps.

high.line

The individual ones!

In terms of its efficiency and user-friendliness, the **high.line** series is in line with the current „more sophisticated" market standard which is based on peripheral or centrifugal pumps.

eco.line

The efficient ones!

The **eco.line**, with its peripheral impeller and highly efficient centrifugal pumps, in combination with speed control, sets new standards in the market in terms of efficiency and ease of use.

flex.line

The flexible ones!

The **flex.line** allows a high degree of freedom in unit configuration. Customer requirements can be met individually from a comprehensive modular system.

Efficient

Reduced energy and operating costs through the use of high-efficiency pump designs, performance-controlled pump drives, and optimized heat transfer.

Sustainable

Both customers and the climate benefit in the long term from resource- saving operation – efficient cooling and tem-perature control solutions not only reduce operating costs, but also protect the environment.

Reliable

High process and operational reliability – in combination with proven technology – ensure high quality, availability, and reproducibility; for example, extremely precise tem- perature control ensures reliable processes.

Innovative

Efficient cooling and temperature control systems ensure consistent performance and extend the service life of the processes. Low-vibration, smooth-running, and efficient solutions reduce the CO2 footprint.

The most efficient product line on the market!

With the **eco.line**, technotrans currently offers the most efficient integrated product line on the market.

The eco.line temperature control units are our operating cost-optimised and **therefore consistently designed for sustainability**. for economical temperature control with water at temperatures up to 180°C and **flow rates up to 230 l/min**.

With its efficient peripheral impeller and highly efficient centrifugal pumps, each combined with speed control and pump energy consumption display, this appliance line sets new standards in the market in terms of efficiency and ease of use.

Efficient technotrans temperature control units

Efficiency and sustainability in focus!



Page 14

teco cd eco
(directly cooled)
Temperature control unit [water]
95 °C



Page 16

teco ci eco
(indirectly cooled)
Temperature control unit [water]
95 °C, 140 °C, 160 °C, 180°C



Page 18

teco cd/ ci eco mit itd Verteiler
(direct/ indirect cooling)
Temperature control unit [water]
95 °C, 140 °C, 160 °C

eco.line

eco.line

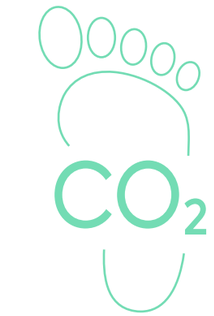
Type	Medium	Temperature range [°C]	Heating output max. [kW]	Cooling output max. [kW]	Pump capacity Controlled operation max. [l/min / bar]
Direct cooling (cd)					
teco cd 95 eco 60	Water	95	9	140	60 (4,7)
Indirect cooling (ci)					
teco ci 95 eco 60	Water	95	9	75	60/60
teco ci 140 eco 60	Water	140	9	120	60/ 6,0
teco ci 160 eco 60	Water	160	9	120	60/ 6,0
teco ci 180 eco 60	Water	180	9	120	60/6,0
teco ci 95 eco 125	Water	95	9/18/27/36	250	125/5,3
teci ci 95 eco 230	Water	95	9/18/27/36	250	230/5,7
teco ci 95 eco 60 itd^{evo}*	Water	95	9	75	60/(6,0)
teco ci 95 eco 125 itd^{evo}*	Water	95	9/18/27/36	250	125/5,3
teci ci 95 eco 230 itd^{evo}	Water	95	9/18/27/36	250	230/5,7
teco ci 140 eco 60 itd^{evo}	Water	140	9	120	60/6,0
teco ci 160 eco 60 itd^{evo}	Water	160	9	120	60/6,0

***mit werkseitig montiertem itd^{evo} Verteiler**

As much as possible, but only as much as necessary!

The pump efficiency module (PEM), which is already included as standard in the eco.line, offers various options for setpoint specification for controlling the speed.

Customers prefer to use the control according to the temperature difference between the **circulation medium supply flow** and the **circulation medium return flow**. Alternatively, specifying the flow rate as an absolute value in L/min or as a percentage value of the speed are available as an option.



lesser CO_2 footprint

Hands-on example of a standard temperature control unit application:

In a customised project, different scenarios could be compared under production conditions:

Customer specification:
Flow rate: 85 L/min
Heating capacity: 27 kW

Result 1 – Technology used so far

Device of a market facilitator with unregulated peripheral impeller pump

Annual electricity consumption in a three-shift operation: **14,495 kWh**

Result 2 – technotrans high.line instruments

Instrument of our high.line series with unregulated peripheral impeller pump

Annual electricity consumption in a three-shift operation: **12,756 kWh**

Result 3 – technotrans eco.line instruments

Instrument of our eco.line series with centrifugal pump without control mode

Annual electricity consumption in a three-shift operation: **10,436 kWh**

Result 4 – technotrans eco.line instruments

Instrument of our eco.line series with centrifugal pump in control mode (ΔT control)

Annual electricity consumption in a three-shift operation: **1,160 kWh**

Savings with the technotrans solutions PEM: 13,335 kWh/year = 92 % or 9,76 t CO_2/year

Putting the CO_2-savings effect into perspective!

How a CO_2 savings of **9,76 t per year** can be achieved by using just one eco.line temperature control unit is shown in the customer example. Here, comparisons with the possibility of offsetting beech trees or the CO_2 emissions from flying are used.

Just 1 efficient technotrans temperature control unit can make so much difference, because ...



781 beech trees are needed to offset approx. **9,76 t CO_2 per year**, or ...

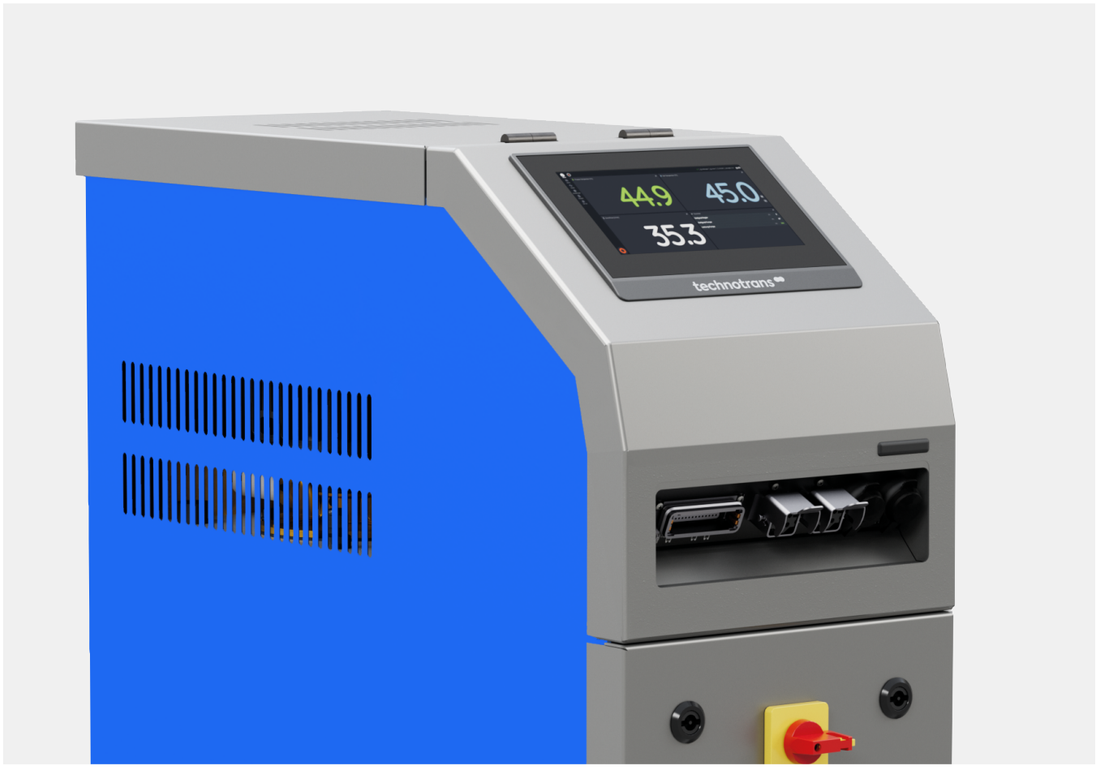
(1 beech with a height of 23 m = neutralization of 12,5 kg CO_2)

... 1 person flying 149 times between Cologne and Munich generates approx. **9,76 t of CO_2**.



(1 flight Cologne/Munich = 65,9 kg CO_2 per person)

The product line eco.line



With the **eco.line**, technotrans currently offers the most most efficient integrated product line on the market.

The **eco.line** temperature control units are operating cost-optimised and therefore consistently designed for sustainability. designed for sustainability for economical temperature temperature control with water at temperatures up to 180 °C and flow rates of up to 440 l/min.

»Efficient pumps, speed control and high operating convenience are standard.«

eco.line

Sustainable and affordable!

»High reliability, maximum operating cost savings and subsidies enable short amortisation periods.«



eco.line

The technotrans ecoAnalyser

The intelligent add-on for logotherm with pump efficiency module (PEM) makes it easy to keep an eye on the complete energy management.

Thanks to the unique usability, all essential efficiency data are visualized and individually retrievable with one click on the leaf icon:

- Balance: Energy saving (kW) of the last 24 hours
- Trend: Energy saving (kW) in the course of the last hour.
- Current: Required and saved power (kW), CO_2 and cost savings.
- Total: Total efficiency data saved over the entire runtime (assigned to the process).

»One step ahead with innovations«





»The essential information at a glance«



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teco cd 95 eco – Temperature control units with direct cooling in 95 °C version ...



- Convenient operation via gesture-capable logotherm 7“ multi-touch display
- CompactControl microcontroller
- „longlife“ stainless steel heating cartridge with long-term guarantee
- Durable sealless peripheral pump (up to 60 l/min)
- Durable and highly efficient centrifugal pump (> 60 l/min)
- Pump speed control (PEM)
- Stainless steel tank (up to 95 °C) / closed circuit (from 140 °C)
- Clean room class ISO 7
- Splash-proof control cabinet IP 54
- Ready for connection with supply cable and CEE plug
- Interface port on the front of the device (e.g. for optional interface analogue, serial, Profibus, Profinet or OPC UA)
- Optional external sensor connection
- Housing and cover: RAL 7012 basalt grey
- Side panels: RAL 260 40 45 LED blue
- Customised paint finish on request

»Sustainable and affordable with high performance«



Example: Display

... including PEM – the pump efficiency module!

An investment that pays for itself in a very short time

Experience shows that energy cost savings of more than 50 % can be achieved when using the PEM in control mode ΔT. In many individual cases, savings of > 90 % have already been generated.

Model calculation of the savings potential in 3-shift operation with 5,940 h
(Using a rate of € 0.18/kWh for the electricity and a conversion factor of 0.732 t CO_2/MWh):

		50 %	75 %	90 %	
1,0 kW	Energy consumption to be saved	2.970,00	4.455,00	5.346,00	kWh/year
	Energy costs to be saved	772,20	1158,30	1389,96	€/year
	CO_2 emission to be saved	1,29	1,94	2,33	CO_2 in t/year

*According to BDEW average electricity price July 23: € 0.26/kWh

• = Standard / ○ = Option / – = not available

Technical data / Standard specif./Options

Model teco	cd 95 eco 60
	95 °C
Medium	Water
Maximum temperature [°C]	95
Maximum pump capacity [l/min / bar]	60 / 4,7
Pump operating mode	speed-controlled
Heating capacity [kW] 2)	9
Cooling	direct
Cooling capacity [kW] 1)	140
Weight [kg]	71
Circulating medium flow/return	G 3/4”
Cooling water flow/return	G 1/2”
Dimensions without attachments in mm [D x W x H]	807 x 280 x 611
7” logotherm multi-touch display	•
”longlife” stainless steel heating cartridge with long-term guarantee	•
Continuous heating control via solid state solid state relay	•
Automatic filling and refilling	•
Dirt trap in the cooling water connection	•
Strainer in the circulating medium return	•
Wetted parts made of corrosion-resistant materials	•
Acoustic alarm	•
Mould draining	○
Low-maintenance flow measurement	•
Return temperature display	•

1) at 15 °C cooling water temperature
2) Depending on voltage and 90 °C flow temperature

Subject to technical modification without notice!

eco.line

teco ci eco – Temperature control units with indirect cooling in 95 °C, 140 °C, 160 °C and 180 °C …



- Convenient operation via gesture-capable logotherm 7“ multi-touch display
- CompactControl microcontroller
- „longlife“ stainless steel heating cartridge with long-term guarantee
- Durable sealless peripheral pump (up to 60 l/min)
- Durable and highly efficient centrifugal pump (> 60 l/min)
- Pump speed control (PEM)
- Stainless steel tank (up to 95°C) / closed circuit (from 140°C)
- Clean room class ISO 7
- Splash-proof control cabinet IP 54
- Ready for connection with supply cable and CEE plug
- Interface port on the front of the device (e.g. for optional interface analogue, serial, Profibus, Profinet or OPC UA)
- Optional external sensor connection
- Housing and cover: RAL 7012 basalt grey
- Side panels: RAL 260 40 45 LED blue
- Customised paint finish on request

»Sustainable and affordable with high performance«



Example: Display

eco.line

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		50 %	75 %	90 %	
1,0 kW	Energy consumption to be saved	2.970,00	4.455,00	5.346,00	kWh/year
	Energy costs to be saved	772,20	1158,30	1389,96	€/year
	CO_2 emission to be saved	1,29	1,94	2,33	CO_2 in t/year
2,2 kW	Energy consumption to be saved	6.534,00	9.801,00	11.761,20	kWh/year
	Energy costs to be saved	1.698,84	2548,26	3057,91	€/year
	CO_2 emission to be saved	2,84	4,26	5,12	CO_2 in t/year

*According to BDEW average electricity price July 23: € 0.26/kWh

• = Standard / ○ = Option / – = not available

	Model teco	95 °C ci 95 eco 60	95 °C ci 95 eco 125	95 °C ci 95 eco 230	140 °C ci 140 eco 60	160 °C ci 160 eco 60	180 °C ci 180 eco 60
Technical data	Medium	Water	Water	Water	Water	Water	Water
	Maximum temperature [°C]	95	95	95	140	160	180
	Maximum pump capacity [l /min / bar]	60 / 6,0	125 / 5,3	230 / 5,3	60 / 6,0	60 / 6,0	60 / 6,0
	Pump operating mode	speed-contr.	speed-contr.	speed-contr.	speed-contr.	speed-contr.	speed-contr..
	Heating capacity [kW] 3)	9	9 / 18 / 27 / 36	9 / 18 / 27 / 36	9	9	9
	Cooling	indirect	indirect	indirect	indirect	indirect	indirect
	Cooling capacity [kW] 1)	75	250	250	120	120	120
	Weight [kg]	50	95	100	–	–	–
	Circulating medium flow/return	G 1/2”	G 1”	G 1 1/2”	G 1/2”	G 1/2”	G 1/2”
	Cooling water flow/return	G 1/2”	G 3/4”	G 3/4“	G 1/4”	G 1/4”	G 1/4”
	Dimensions without attachments in mm [D x W x H]	662 x 280 x 611	849 x 399 x 752	849 x 399 x 752	807 x 280 x 611	807 x 280 x 611	807 x 280 x 611
Standard specif./Options	7” logotherm multi-touch display	•	•	•	•	•	•
	”longlife” stainless steel heating cartridge with long-term guarantee	•	•	•	•	•	•
	Continuous heating control via solid state solid state relay	•	•	•	•	•	•
	Automatic filling and refilling	•	•	•	•	•	•
	Additional manual filling option for conditioned water	•	•	•	–	–	–
	Integrated make-up pump	–	–	–	–	•	•
	Strainer in the cooling water connection	•	•	•	•	•	•
	Strainer in the circulating medium return	•	•	•	•	•	•
	Shut-off valves in the circulating medium circuit	•	•	•	•	•	•
	Shut-off valves in the cooling water circuit	○	○	○	○	○	○
	Wetted parts made of corrosion-resistant materials	•	•	•	•	•	•
	Audible alarm	•	•	•	•	•	•
	Mould draining	•2)	○	○	○	•	•
	Sealless pump	•	–	–	○	○	○

1) at 15 °C cooling water temperature and 90 °C or 130 °C flow temperature
2) By reversing the direction of pump rotation 3) Depending on voltage

Subject to technical modification without notice!

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teco cd/ci t itd evo temperature control units with direct and indirect cooling ...

The itd evo multiple distribution system is specially designed for control integration on technotrans temperature control units with 7-inch logotherm multi-touch display. The water distributor can be attached to the temperature control unit or directly to the consumer, e.g. injection mould or the machine clamping plate.

The visualisation of the measured values provided at the water distributor, such as flow rate and temperature, is carried out on the temperature control unit display, and so is a setpoint specification for automatic flow rate control. This eliminates the need for a separate control unit, which was previously common on the market for water distribution systems.

An adaptive system with many possibilities!

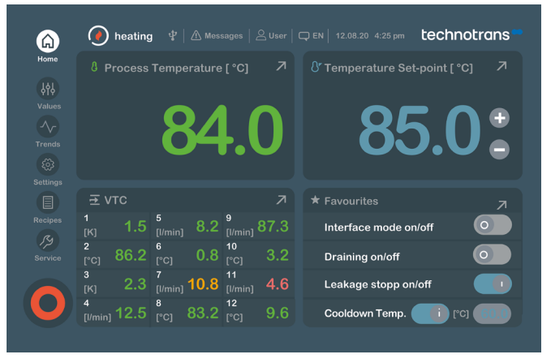
The flow rate and the return temperature of each individual circuit are recorded and transmitted to the temperature control unit.

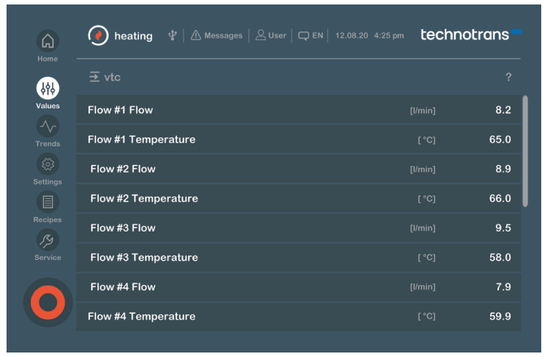
Two alternative measuring methods, the **low-maintenance** vortex measurement and the **maintenance-free** ultrasonic flow measurement, are available for flow rate measurement.

For hydraulic balancing and control of the individual circuits, a passive variant with manual valves or an active variant with automatic control valves can be selected.



Coordinated with each other:
Temperature control unit and water distributor





Display and control unit logotherm with 7 “multi-touch display

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... cooling combined with manually adjustable 4 and 6-way water distributors

- Easy mounting on temperature control units up to maximum 6 circuits
- Display, communication, operation via the 7-inch touch screen of the temperature control units
- Continuous, low-maintenance or maintenance free and contamination-insensitive flow rate measurement for each distribution circuit
- Common temperature measurement and display in the supply flow line
- Separate temperature measurement in the return line per distribution circuit
- Display and monitoring of the flow per distribution circuit
- Limit setting for flow rate for each distribution circuit
- Limit setting for temperature for each distribution circuit
- Flow measurement according to the vortex principle
- Optional: flow measurement based on the Ultrasound principle
- Throttle valve for adjusting the volume flow and hydraulic balancing for each distribution circuit
- Shut-off ball valve for each distribution circuit flow
- Differential temperature monitoring
- Corrosion-resistant materials





Installation example-
integration at the consumer with maintenance-free ultrasonic sensors

Technische Daten

	95°C						140°C		160 °C
Model teco	ci 95 eco 60itd VB	ci 95 eco 60itd UB	ci 95 eco 125td VB	ci 95 eco 125td UB	ci 95 eco 125td VB	ci 95 eco 230itd UB	ci 140 eco 60itd VB	ci 140 eco 60td UB	ci 160 eco 60itd VB
Medium	water	water	water	water	water	water	water	water	water
Temperature max. [°C]	95	95	95	95	95	95	140	140	160
Pump capacity max. [l/min / bar]	60 / 6,0	60 / 6,0	125 / 5,3	125 / 5,3	230 / 5,3	230 / 5,3	60 / 6,0	60 / 6,0	60 / 6,0
Pump mode	speed com.	speed com.,	speed com..	speed com..	speed com.,	speed com.,	speed com.,	speed com.,	speed com.,
Heating capacity [kW]	9	9	9/18/27/36	9/18/27/36	9/18/27/36	9/18/27/36	9	9	9
Flow measurement	vortex	ultrasonicl	vortex	ultrasonic	vortex	ultrasonic	vortex	ultrasonic	vortex
Flow measuring range	2-40	0,3-60	2-40	0,3-60	2-40	0,3-60	2-40	0,3-60	2-40
Quantity of individual circles	4	4	6	6	6	6	4	4	4
Circulating medium supply and return	4x G 1/2”	4x G 1/2”	6x G 1/2”	6x G 1/2”	6x G 1/2”	6x G 1/2”	4x G 1/2”	4x G 1/2”	G 1/2”
Dimensions without attachment parts in mm [T x B x H]	662x280x910	662x280x910	849x399x910	849x399x910	849x399x910	849x399x910	662x280x910	662x280x910	662x280x910

Subject to technical modification without notice!

Energy efficiency is eligible for government funding!

Temperature controllers of the **eco.line** and **flex.line** not only save high operating costs by using centrifugal pumps and the pump efficiency module (PEM), they also allow the use of government subsidies.

The funding programmes are specific to each country. In Germany, up to 40 % of eligible investments can currently be subsidised. Investments by smaller enterprises (SME) as well as investments by large companies are eligible for government funding.

«CO_2 reduction is rewarded several times over»

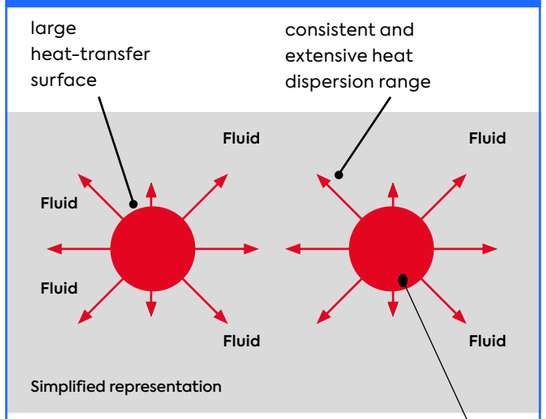


Zero-loss heat transfer!

The innovative technotrans “longlife heating cartridge” transfers the heat directly to the medium without any resistance, thereby ensuring continuous, high efficiency combined with excellent accessibility and cleanability.

Other notable advantages are the fine-tuning of the heat output, excellent heating rates in a small installation space, low weight and manageable need for insulation.

Direct heat transfer with technotrans “long-life” heating unit



- **Minimal energy losses**
- **High degree of efficiency**
- **„low carbon footprint“**
- **Long service life due to technotrans “long-life” technology**

«Ultra-fast heating and excellent cleaning capability»

The excellent reliability and fundamental efficiency of technotrans temperature control units provide the user with a high level of investment safety.

Combined with the highly efficient centrifugal pumps and the innovative technotrans “longlife heating cartridges” with their long-term warranty, this investment safety becomes truly outstanding.

Efficient technotrans temperature control units

Impressions









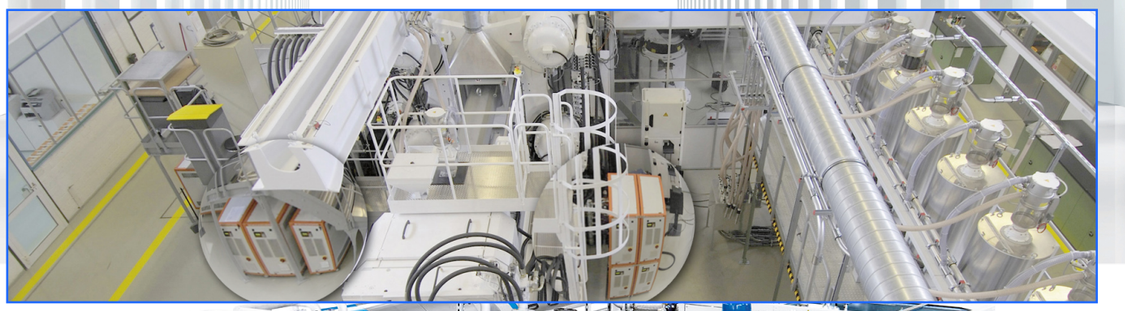


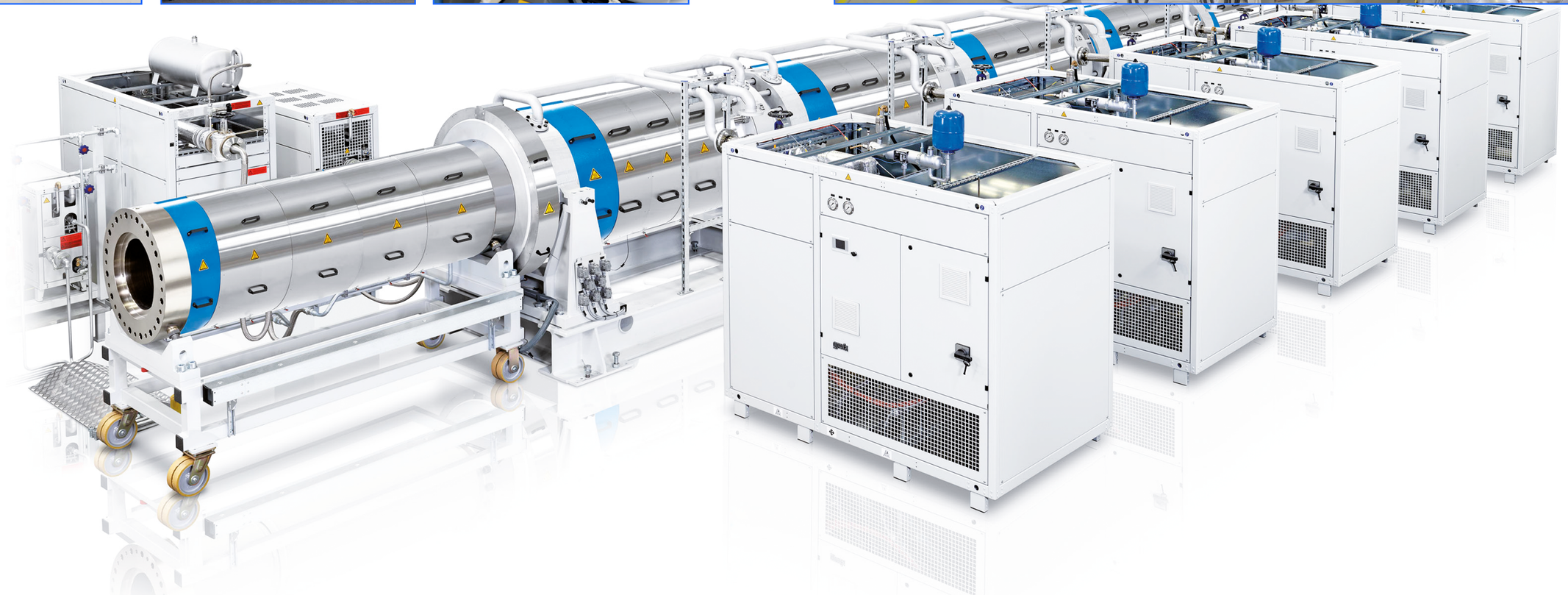












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