



# SOLUTIONS FOR INDUSTRIAL PROCESS HEAT

Quality. Innovation. Efficiency.



# HIGHLY EFFICIENT SOLUTIONS FOR INDUSTRIAL PROCESS HEAT

## THE AURA PRODUCT RANGE AT A GLANCE

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# ONE CERTIFICATE PROVES MORE THAN A THOUSAND PROMISES OF QUALITY

## **AURA HAS BEEN AWARDED ALL IMPORTANT NATIONAL AND INTERNATIONAL CERTIFICATES**

We are certified in accordance with:

- Manufacture License (China)
- ASME - S & U (USA)
- National Board (USA)
- EAC TR-ZU (Eurasian Economic Union)
- DGRL 2014/68/EU (Europe)
- Bureau Veritas Ship & Offshore Installation (International)
- Det Norske Veritas Ship & Mobile Offshore Units (International)
- SVTI 501(Switzerland)
- HP 0/EN ISO 3834-2 (Germany)
- EN 1090-2 (Germany)
- WHG (Germany)

We also work in accordance with  
Japanese Industrial Standards (JIS)





WE WANT TO EXCEED  
YOUR EXPECTATIONS

**CUSTOMER SATISFACTION**

**INNOVATION**

**SUSTAINABILITY**

- **Customer satisfaction** is our top priority. We are passionate about developing tailored solutions that prove their worth daily through their ease of operation.
- **Innovation** is our key to success, such as sensor technology for automated system monitoring and the AURA touchpad for easy system control. These advanced developments are now integral to our systems.
- **Sustainable**, lasting partnerships form the basis of solid relationships from which both sides benefit.

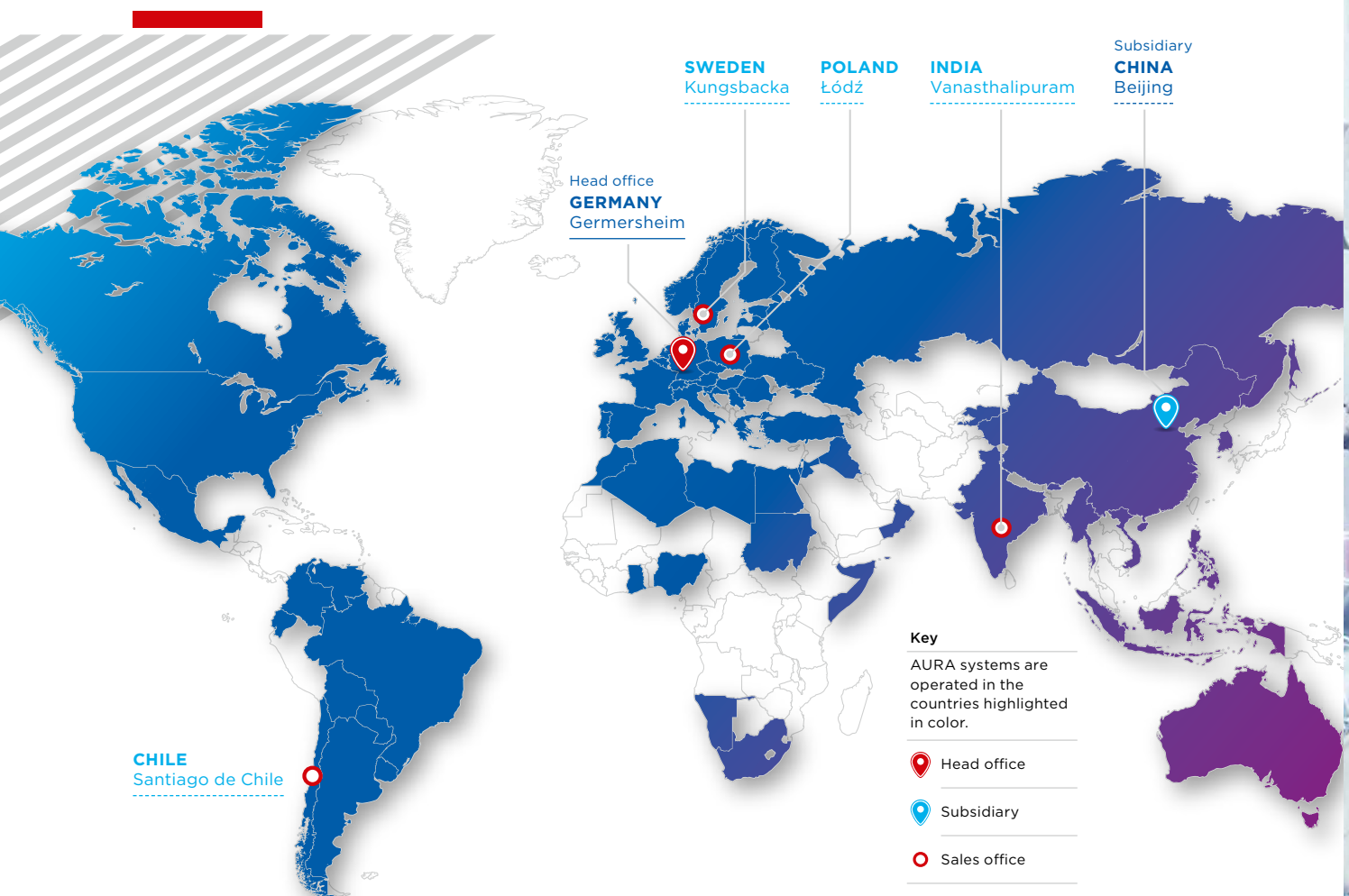


# YOUR SUCCESSFUL, RELIABLE PARTNER – WORLDWIDE

## LEADER IN HEAT TRANSFER SYSTEMS

Since its inception in 1982, AURA has developed into a flourishing medium sized company. Our key area of expertise has always been and remains in process heat technology. We are internationally active with

customers around the globe. Customers in the Asian market are supported directly by our Beijing representation. Our expertise in engineering and in-house manufacturing guarantee the highest level of quality.





## UNIQUE SOLUTIONS PACKED WITH CLEVER FEATURES

FOR EXAMPLE  
FIRED THERMAL OIL HEATERS

**MADE IN GERMANY**

**IN-HOUSE MANUFACTURING**

**CERTIFIED QUALITY**

One particular example of our attention to quality is the reversing plate flooded with thermal oil connecting the inner and outer coil. It is just slightly hotter than the thermal oil. The thermal oil flows through channels in the rear wall of the boiler cooling it down. This means that the temperature differentials (arising from the burner cycling on and off) will not adversely affect the rear wall of the boiler. This guarantees a long system service life, in contrast to concrete rear walls without a fitted reversing plate, which store heat and are subject to cracking over time. This guarantees a longer service life compared to concrete rear walls.

Power cuts and stopping the circulation pump from running can result in overheating and cracking of concreted walls, due to the heat transferred by the thermal oil. AURA's reversing plate prevents this.

The special design of the heater's internal path is particularly noteworthy, as it ensures that thermal diffusion occurs with the least possible stresses.

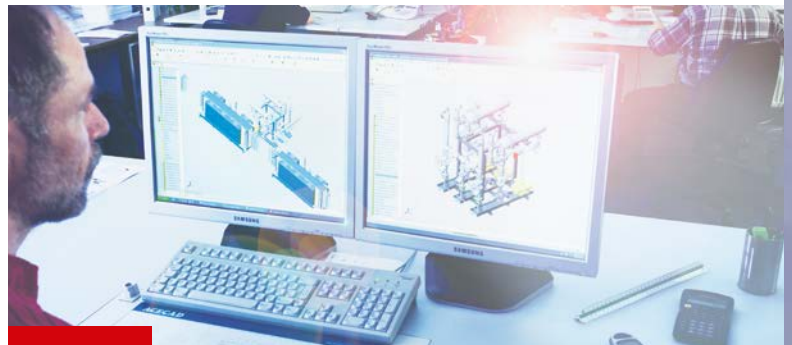




# AURA – THE RIGHT CHOICE FOR TOP QUALITY

## OUTSTANDING PRECISION AND ATTENTION TO DETAIL MAKE ALL THE DIFFERENCE

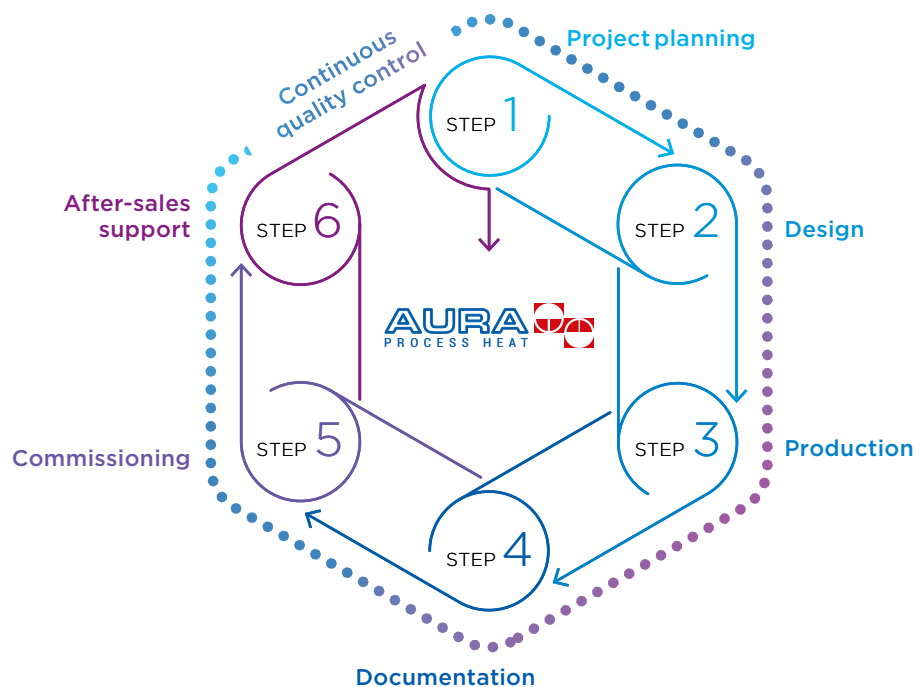
Our success in designing process heating systems over many years has given us the necessary experience to develop the best and most economical solutions for you. We employ the latest technologies and processes in our engineering and production methods. Our engineering department develops 3D models and engineering drawings, and with the help of special software, calculates and simulates the heat flow inside our heaters. The operational reliability of our systems is always given top priority.



Fast commissioning is ensured by extensive preassembly and detailed quality checks at the AURA factory.

## THE OPTIMUM SOLUTION IN 6 STEPS

We combine all of the most important areas of expertise under one roof: project planning, solution design, production and documentation, right through to after-sales support and spare parts supply. Quality control is an essential part of every step.





AURA KEEPS YOUR  
SYSTEM RUNNING –  
NO MATTER WHERE  
YOU ARE

**COMMISSIONING**

**AFTER-SALES SERVICE**

**MAINTENANCE**

AURA systems are used in some of the harshest operating conditions. Durability and reliability of our products is of the utmost importance. This is why we provide fast, comprehensive and uncomplicated spare parts service.

If required, we can take care of the commissioning of our systems and provide appropriate training for the operating staff. Our qualified specialist team are there to help you make the most of your AURA system by ensuring maximum output and service life. We want your system to work for you. Again, operational reliability is, of course, a top priority.



# THE AURA PRODUCT RANGE

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## OPTIONS

Optionally AURA can provide functional units  
in compact container design for outdoor installations.

## AURA PRODUCT MATRIX

AURA – THE PREMIUM B  
FOR INDUSTRIAL PROCE

APPLICATIONS	AURA product groups →										FIRED HEATERS		ELECTRIC HEATERS	
	SECTORS										AKxT	AKxW	AExT	AExW
											Page 10	Page 10	Page 12	Page 12
Calender heating / cooling	Pa	Ma						Pl	No		■	■	■	■
Press heating / cooling		Ma			W			Pl	No		■	■	■	■
Extruder heating / cooling		Ma						Pl	No				■	
Deep fryer heating		Ma					Fo				■		■	
Galvanizing bath heating											■	■	■	■
Dryer heating		Ma			W		Fo				■		■	
Reaction and agitator vessels heating / cooling		Ma						Ph	Pl	Ch	■	■	■	■
Autoclave heating		Ma			W			Ph		Ch	■	■	■	■
Asphalt mixer heating		Ma	Bi								■		■	
ORC process heating		Ma				En					■		■	
Biogas upgrading / amine treatment (power to heat)						En					■		■	
Heat recovery in industrial processes		Ma		Oi	W	En		Ph	Pl	Ch				
Commercial baking oven heating		Ma					Fo				■		■	
Crude oil processing (e.g. FPSO ships)				Oi							■		■	
Natural gas preheating				Oi										
Heating for blanching (e.g. vegetables)							Fo							
Storage tank heating and auxiliary heating for product pipelines			Bi	Oi						Ch	■		■	
Formwork heating, precast concrete components			Bi								■		■	
Heating for pasteurisation						En	Fo					■		■

Paper &  
Cardboard

Machine Tools

Bitumen &  
Tar

Oil &amp; Gas



# RAND SS HEAT

HEAT RECOVERY				STEAM AND THERMAL OIL HEATED SYSTEMS						WATER BATH HEATERS	SECONDARY CONTROL CIRCUIT	SILENCERS
RxL	RxT	RxW	WHRU	DxS	DxT	DxW	TxS	TxD	TxW	WaBH	TST	
Page 14	Page 14	Page 14	Page 14	Page 16	Page 16	Page 16	Page 16	Page 16	Page 16	Page 18	Page 19	Page 19
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Wood



Energy



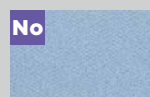
Food & Drink



Pharmaceuticals & Health



Plastics



Non-Woven Fabric



Chemical Industry

# AURA FIRED HEATERS

**AKxT****THERMAL OIL  
HEATING SYSTEM,  
FIRED**

## SPECIFICATIONS

### HEATING MEDIUM

- Fuel oil
- Diesel
- Heavy fuel oil
- Natural gas
- Other special fuels

### PROCESS MEDIUM

- Thermal oil

### TEMPERATURE RANGE

- Up to 400 °C

### OUTPUT RANGE

- 100 kW to 25,000 kW



### PRODUCT EXAMPLE

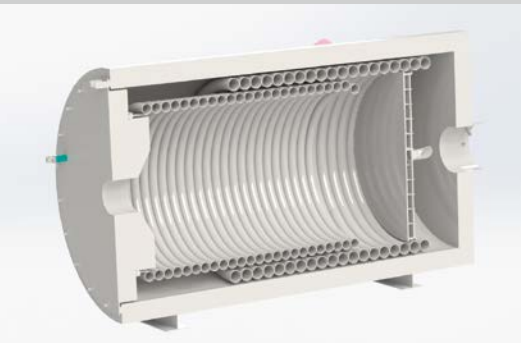
- Gas fired thermal oil heating system with 1,600 kW,  $\Delta T 40$  K  
Type: AKL 1604 G



## VERSATILE CONSTANT TEMPERATURE BURNER

- Cooled, thermal oil flooded, boiler rear wall for long service live
- Standard model with 20 °C or 40 °C deltaT. Alternatives on request.
- Unit can be installed either vertically or horizontally; with the upright version, firing is possible both from above and below
- Pre-assembled functional units enable easier on-site installation
- Optionally air pre-heater can be installed to increase the system efficiency to up to 97%

**SECTORS:** paper & cardboard, machine tools, bitumen & tar, oil & gas, wood, energy, food and drink, pharmaceuticals & health, plastics, non-woven fabric, chemical industry



### EFFICIENT OPERATION

- 3-pass boiler for optimum heat transfer

## AURA FIRED HEATERS



	AKxT	AKxW
	Thermal oil heating system, fired	Hot water heating system, fired
Heating medium	<ul style="list-style-type: none"> <li>• Fuel oil</li> <li>• Diesel</li> <li>• Heavy fuel oil</li> <li>• Natural gas</li> <li>• Other special fuels</li> </ul>	<ul style="list-style-type: none"> <li>• Fuel oil</li> <li>• Diesel</li> <li>• Heavy fuel oil</li> <li>• Natural gas</li> <li>• Other special fuels</li> </ul>
Process medium	Thermal oil	Water
Temperature range	Up to 400 °C	120 °C to 230 °C
Output range	100 kW to 20,000 kW	100 kW to 20,000 kW

# AURA ELECTRIC HEATERS

## AExT

THERMAL OIL  
HEATING SYSTEM,  
ELECTRICALLY HEATED



### SPECIFICATIONS

#### HEATING MEDIUM

- Electricity

#### PROCESS MEDIUM

- Thermal oil

#### TEMPERATURE RANGE

- Up to 400 °C

#### OUTPUT RANGE

- 20 kW to 6,000 kW



### PRODUCT EXAMPLE

- Electrically heated thermal oil system with 1100 kW, 165 m<sup>3</sup>/h, 250 °C, cooling circuit

Type: AEFT  
1100/165/250 k RP



## ZERO EMISSION ELECTRIC HEATING

- Can be directly heated and cooled without additional secondary control circuits
- Compact design allows installation in tight spaces
- Explosion-proof designs are available on request
- Zero emissions, therefore suitable for installation in workspaces

**SECTORS:** paper & cardboard, machine tools, bitumen & tar, oil & gas, wood, energy, food and drink, pharmaceuticals & health, plastics, non-woven fabric, chemical industry



### EASY MAINTENANCE

- Plug-in flanged heaters for easy maintenance

## AURA ELECTRIC HEATERS

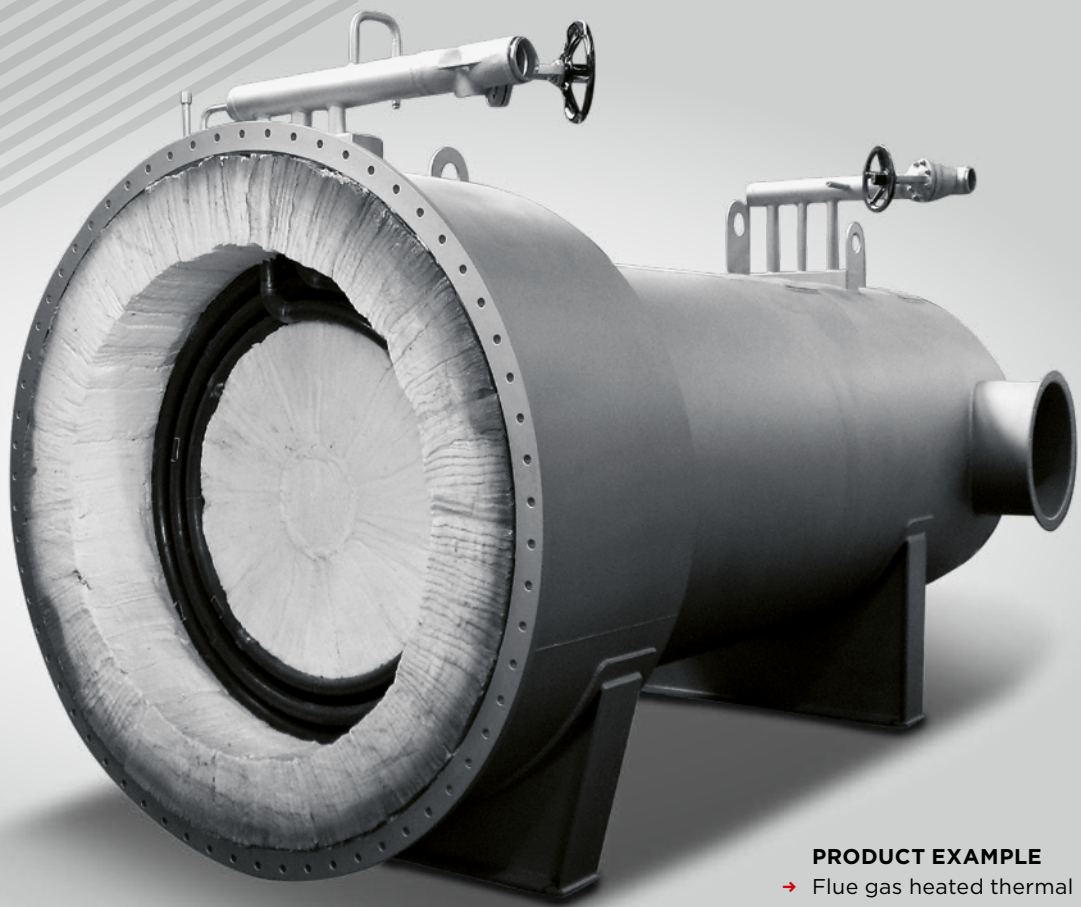


	AExT	AExW
	Thermal oil heating system, electrically heated	Hot water heating system, electrically heated
Heating medium	Electricity	Electricity
Process medium	Thermal oil	Water
Temperature range	Up to 400 °C	120 °C to 230 °C
Output range	20 kW to 6,000 kW	20 kW to 6,000 kW

# AURA HEAT RECOVERY

**RxT**

THERMAL OIL  
HEATING SYSTEM,  
FLUE GAS HEATED



## SPECIFICATIONS

**HEATING MEDIUM**

- Flue gas

**PROCESS MEDIUM**

- Thermal oil

**TEMPERATURE RANGE**

- Up to 400 °C

**OUTPUT RANGE**

- Up to 15,000 kW

**PRODUCT EXAMPLE**

- Flue gas heated thermal oil heating system, with 1,570 kW, 63 m<sup>3</sup>/h and 305 °C thermal oil temperature and 1,000 °C flue gas temperature

Type: RWT 1570/63/305



## INNOVATIVE CONCEPTS FOR ENERGY RECOVERY

The heat from flue gases with temperatures of up to 1,200 °C is recovered with heat transfer fluids such as water, steam, air or thermal oil and used in further processes. This significantly increases system efficiency. No additional (expensive) energy is required and a valuable contribution towards protecting the environment is made.

**SECTORS:** machine tools, oil & gas, wood, energy, pharmaceuticals & health, plastics, chemical industry



### RECOVERY FROM GAS TURBINE FLUE GASES

→ Example of an AURA waste heat recovery system (type WHRU), deployed on offshore platforms to utilize hot turbine flue gases to heat thermal oil for crude oil processing.

## AURA HEAT RECOVERY



**RxL = 400°C**

Air heating system,  
flue gas heated

**RxT = 1,200°C**

Thermal oil  
heating system,  
flue gas heated

**RxW = 500°C**

Hot water  
heating system,  
flue gas heated

**WHRU = 500°C**

Heat recovery  
system

	RxL = 400°C	RxT = 1,200°C	RxW = 500°C	WHRU = 500°C
<b>Heating medium</b>	Flue gas	Flue gas	Flue gas	Flue gas
<b>Process medium</b>	Air	Thermal oil	Water	Thermal oil
<b>Temperature range</b>	Up to 300°C	Up to 400°C	40°C to 230°C	Up to 400°C
<b>Output range</b>	3,000 kW	Up to 15,000 kW	Up to 3,000 kW	Up to 20,000 kW

# AURA STEAM & THERMAL OIL HEATED SYSTEMS

**TxD**

STEAM BOILER,  
THERMAL OIL  
HEATED



**PRODUCT EXAMPLE**

- Steam boiler, thermal oil heated, with 300 kW and 400 kg/h  
Type: TWD 300/400/14

**SPECIFICATIONS**

**HEATING MEDIUM**

- Thermal oil

**PROCESS MEDIUM**

- Steam

**TEMPERATURE RANGE**

- 120 °C to 230 °C

**OUTPUT RANGE**

- Up to 12,000 kW





→ Example of an AURA steam heated hot water heating system (type DxW), deployed in the plastic industry.

## EFFICIENT USE OF AVAILABLE PROCESS RESOURCES

Benefits of thermal oil heated steam boilers over directly fired steam boilers:

- Large steam chamber allows staged transfer to consumers
- Relatively few limited operating conditions due to potential of re-evaporation (principle of Ruths Steam Accumulator)

**SECTORS:** machine tools, wood, energy, food & drink, pharmaceuticals & health, plastics, chemical industry

## AURA STEAM AND THERMAL OIL HEATED



	<b>DxS</b>	<b>DxT</b>	<b>DxW</b>	<b>TxS</b>	<b>TxD</b>	<b>TxW</b>
	Edible oil heating system, steam heated	Thermal oil heating system, steam heated	Hot water heating system, steam heated	Edible oil heating system, thermal oil heated	Steam boiler, thermal oil heated	Hot water heating system, thermal oil heated
<b>Heating medium</b>	Steam	Steam	Steam	Thermal oil	Thermal oil	Thermal oil
<b>Process medium</b>	Edible oil	Thermal oil	Water	Edible oil	Steam	Water
<b>Temperature range</b>	60°C - 240°C	40°C - 300°C	40°C - 240°C	60°C - 240°C	100°C - 240°C	40°C - 240°C
<b>Output range</b>	30 kW to 5,000 kW	30 kW to 10,000 kW	20 kW to 10,000 kW	30 kW to 5,000 kW	80 kW to 15,000 kW	20 kW to 10,000 kW

# AURA WATER BATH HEATERS

## WaBH

### WATER BATH HEATERS



#### PRODUCT EXAMPLE

- Gas fired water bath heaters with 1,200kW, 100m<sup>3</sup>/h,  $\Delta T$ 20 K  
Type: WaBH 3002G

### SIGNIFICANT AND RELIABLE SAFETY MARGIN

Heating natural gas before decompression ensures that the gas temperature does not fall below the freezing point. Our water bath heaters are:

- Fully automatic
- Proven through many successful installations
- Safe, due to the indirect heating of natural gas by water

**SECTORS:** oil & gas

### SPECIFICATIONS

#### HEATING MEDIUM

- Diesel
- Natural gas

#### PROCESS MEDIUM

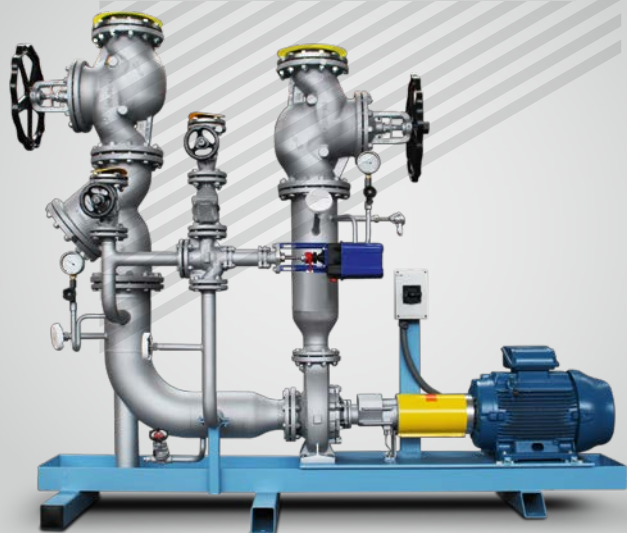
- Gaseous media
- Liquid media

#### TEMPERATURE RANGE

- 120 °C to 230 °C

#### OUTPUT RANGE

- Up to 10,000 kW

**TST****SECONDARY  
CONTROL CIRCUIT**

- Adjustment screws at the side of the pump baseplate do guarantee that the motors will star geared during mounting.

**PRECISE TEMPERATURE CONTROL**

- Skid mounted for easier installation – as with all AURA solutions
- Available in different sizes, with or without cooler unit, for various areas of application
- Laser-aligned pump couplings

**SECTORS:** paper & cardboard, machine tools, bitumen & tar, oil & gas, wood, energy, food and drink, pharmaceuticals & health, plastics, non-woven fabric, chemical industry

**SPECIFICATIONS****PROCESS MEDIUM**

- Thermal oil

**TEMPERATURE RANGE**

- Up to 400 °C

**OUTPUT RANGE**

- Up to 5,000 kW

**Silencers****FLOW CONTROL  
SILENCER /  
ABSORPTION SILENCER****PRODUCT EXAMPLE**

- DN500 flow control silencer, max. 400 °C; for pressure release up to 30 bar

Type: LS/Vi, DN2800

Silencers complete our product range.

**SPECIFICATIONS****PROCESS MEDIUM**

- All

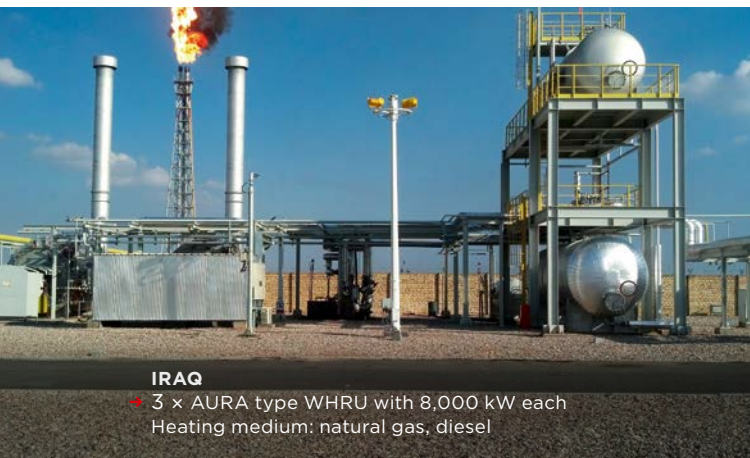
**TEMPERATURE RANGE**

- Up to 550 °C

**DIMENSIONS**

- DN20 to DN300





**IRAQ**

- 3 x AURA type WHRU with 8,000 kW each  
Heating medium: natural gas, diesel

## MAJOR SYSTEMS FROM AURA

Discover more about our successful product range  
with global appeal.

Your AURA team will be happy to assist you  
with information and advice.



**CHINA**

- 4 x AURA type WHRU  
with 12,000 kW each.  
Heating medium:  
flue gas from gas turbines

**CHINA**

- 4 x AURA type AKLT  
with 12,000 kW each.  
Heating medium:  
natural gas, diesel, crude oil



**CHINA**

- 2 x AURA type AKLT  
with 6,700 kW each.  
Heating medium:  
natural gas

**SUDAN**

- 3 x AURA type AKLT  
with 6,100 kW each.  
Heating medium:  
natural gas



**INDONESIA**

- 3 x AURA type AKLT  
with 12,600 kW each.  
Heating medium:  
natural gas

**SUDAN**

- 2 x AURA type AKLT  
with 6,100 kW each.  
Heating medium:  
natural gas

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