

Tube Heating Systems

Innovative | Efficient | Comfortable

Made in Germany

Schwank Portfolio



Heat Recovery



Air Curtains



Luminous Heaters



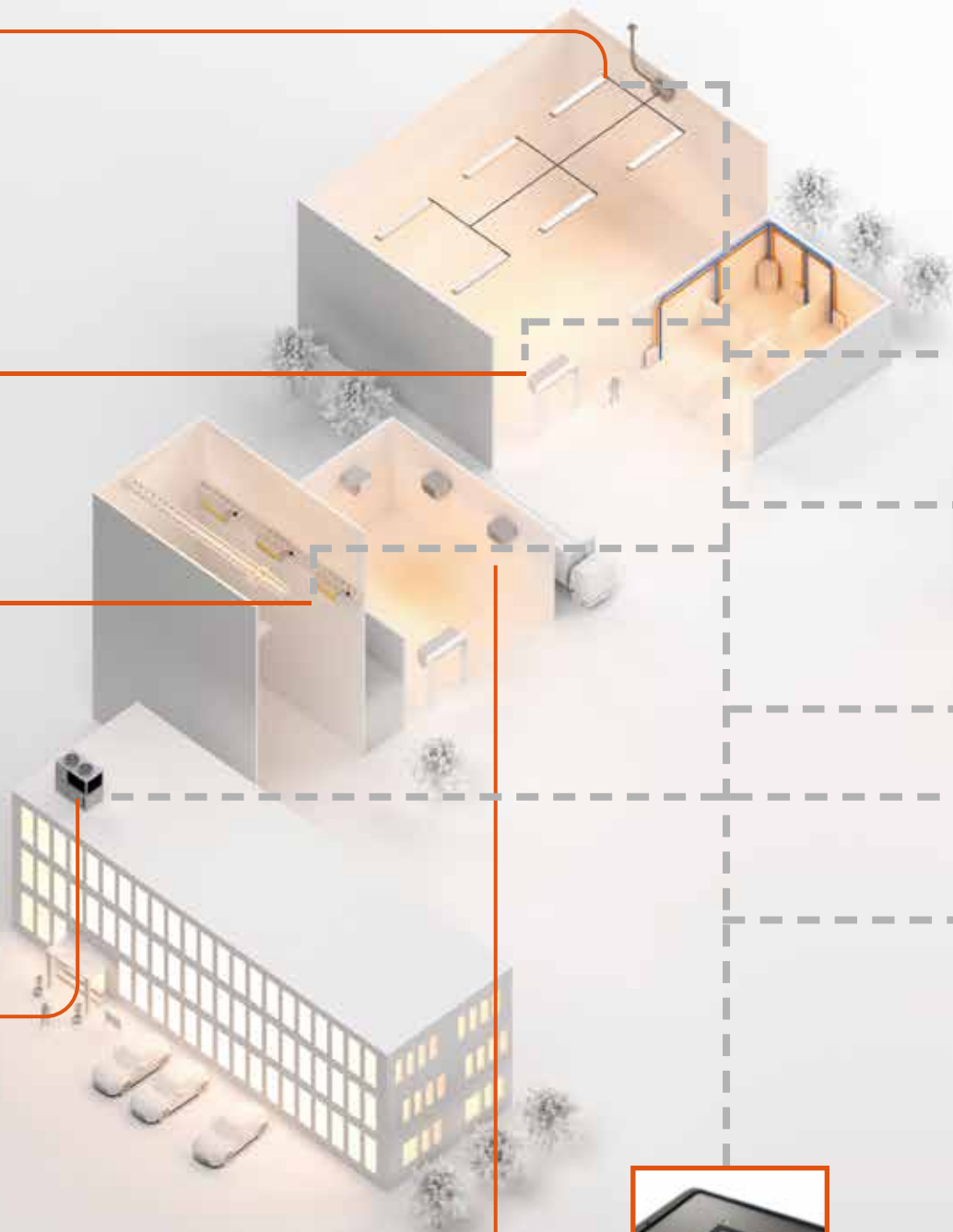
Gas Heat Pumps

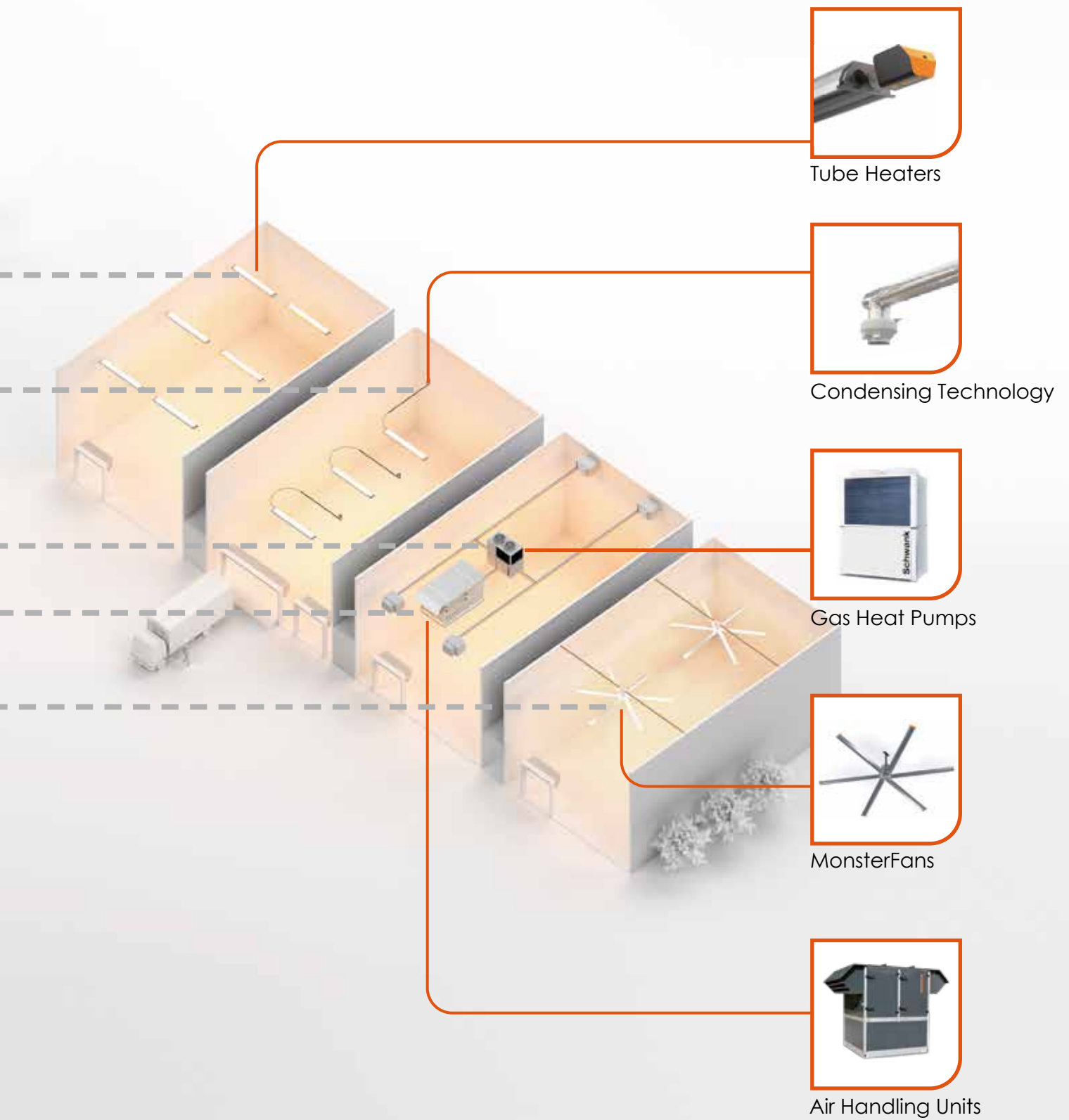


Warm Air Units

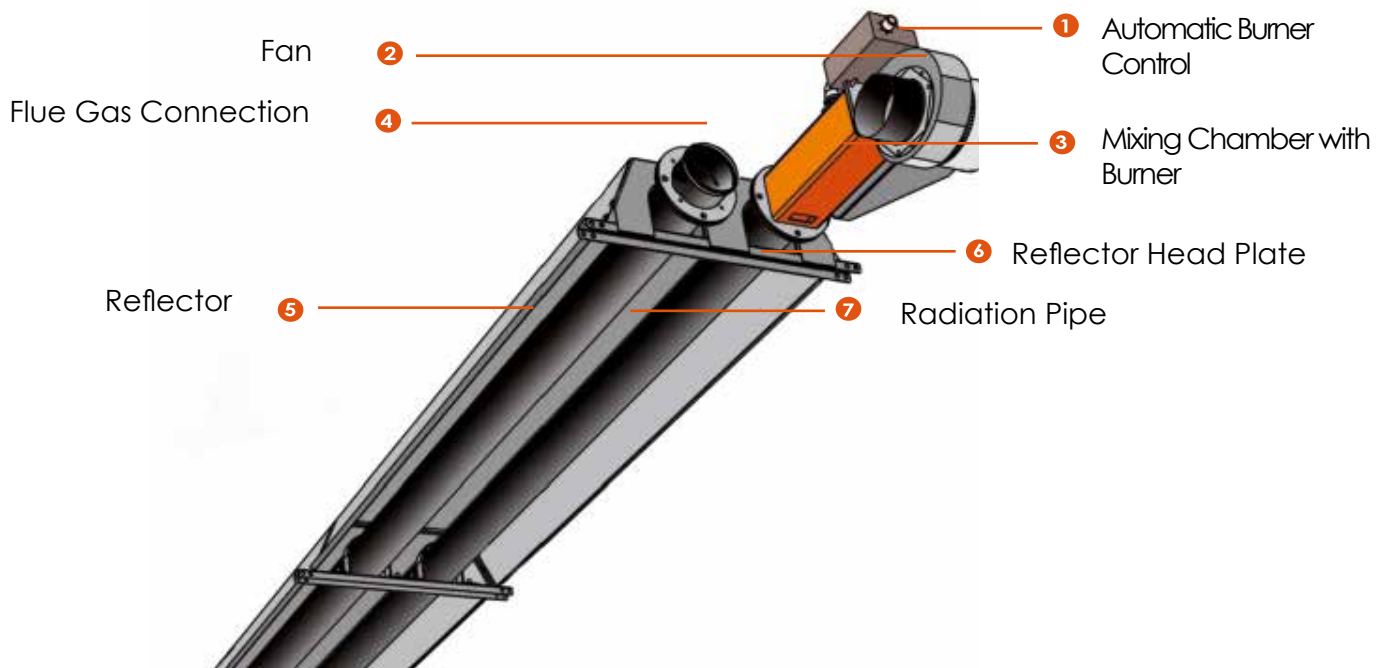


Control Technology





The Tube Heater Principle



Functionality

The Burner

The gas burner generates a flame inside the tube. The flame heats up the radiant tubes to temperatures between 550° C and 700° C, whereby this energy is released into the room in the form of infrared or thermal radiation. The actual combustion process takes place in a closed tube.

The Radiation Tube

Due to a calorised heat treatment process, the tubes have a high corrosion protection improving the emission results. The turbulators optimise the heat transfer.

The Reflector

The reflectors above the radiant tubes ensure that the heat radiation is reflected into the working area. To ensure that this happens as efficiently as possible and that no unnecessary heat is lost, the reflectors are aluminium-coated, and the reflector body is closed all around - thus achieving an extremely high degree of reflection of 95%.

Due to the closed form, the radiant tubes are surrounded by a warm air cushion supporting additional heat emission [This additionally

increases the energy efficiency of the systems].

The reflectors of highly efficient radiators such as calorSchwank and deltaSchwank also feature a high-temperature resistant thermal insulation of the reflectors [used in space flight technology]. Like the thermal insulation of a building, the insulated reflector avoids unnecessary heat losses.

Schwank offers three models that differ in their efficiency:

A. deltaSchwank



B. calorSchwank



C. infraSchwank



Fully Modulating Burner Technology

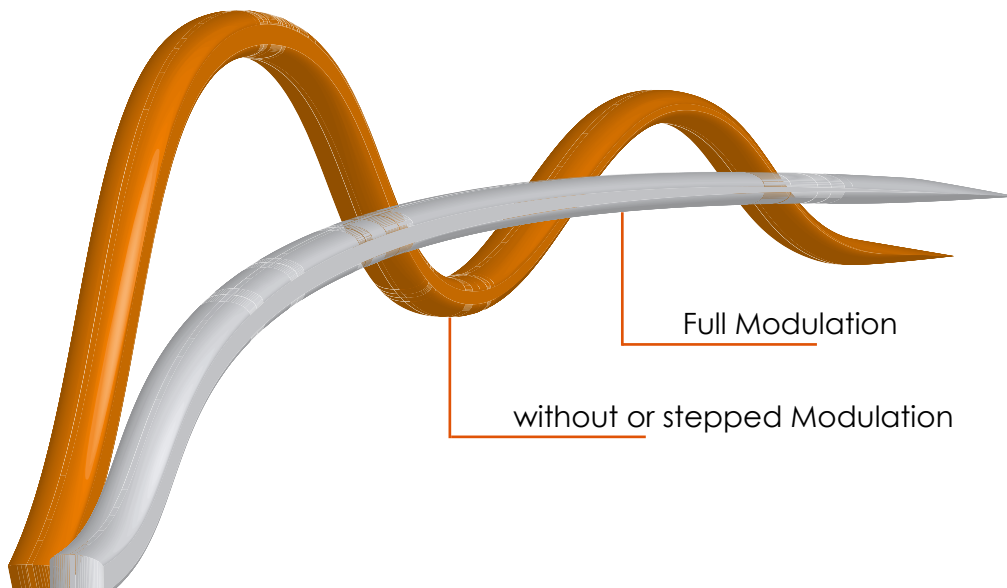
As Standard

To ensure that the desired target temperature is achieved under all conditions, a heating system is always designed based on the local minimum outside air temperature.

However, days with these very low temperatures are rare, so that the heating system is generally oversized on average 85% of all days. Therefore, it makes sense that the heating should be operated at only partial load for almost the entire heating period.

Fully modulating heaters fulfill this task best, because only they most sensibly heat efficiently and comfortably. By this means you can ideally adjust the heat output to the actual demand. While conventional burners are designed to achieve the heat output via on/off switching cycles, Schwank heating systems fully modulate continuously - and that as standard.

The combustion mix consisting of both air and gas, can dynamically be adapted to ensure the most clean combustion. Clean. Efficient. Sustainable.



Advantages of Fully Modulating Tube heaters:

- The adaptation of gas and combustion air to the actual heat demand increases the energy efficiency by approx. 14%.
- The lifecycle of the heating system is significantly increased, since frequent ON/OFF cycles [cold starts] and frequent cycles can be reduced by up to 43%.

NEW! deltaSchwank - A Revolutionary Approach of the Tube Heater Technology

Clean, efficient & sustainable



99,1% Seasonal Efficiency

Fully modulating EC motor for variable power adjustment to the actual heat demand

Pneumatic gas/air compound with dynamic adjustment of gas and combustion air

bluTek burner in the high temperature resistant combustion chamber

Combustion chamber of high temperature resistant Stainless steel flame tube

Optimised reflector geometry, fully insulated with intermediate reflector

Modbus connection for integration into Building Management Systems

Made in Germany



The Delta: Maximum Focus on Customer Benefit

Efficient bluTek burner with high-temperature resistant stainless steel combustion chamber

The patented bluTek burner generates the heat in a high-temperature resistant stainless-steel combustion chamber and is then transferred to the radiant tubes. The knitted surface structure of the burner causes a unique heat distribution and flame cooling with a result of reducing NO_x to 35 mg/kWh.

Energy Savings through Pneumatic Gas-Air Ratio Control

The performance of deltaSchwank can be ideally adapted to the current heat demand,

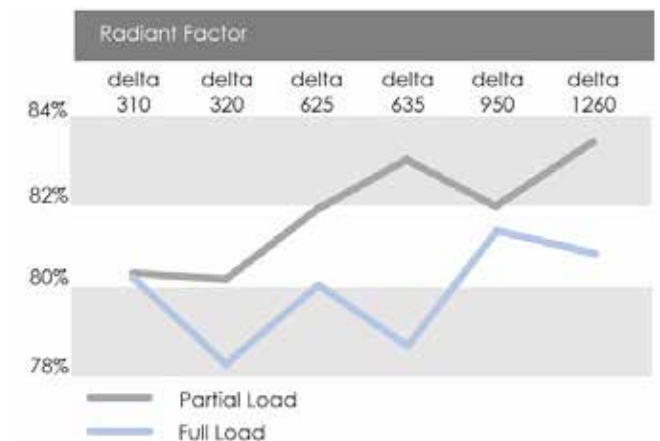
saving energy and increasing comfort in the building. The pneumatic gas-air mixture ensures the optimum gas-air ratio - excess air and energy losses are thus avoided.

95% Reflection Properties

The combustion chamber reflector of deltaSchwank is made from FERAN [aluminium plated steel]. With the reflector geometry developed in the laboratories of the Fraunhofer Institute, deltaSchwank tube heater achieves a reflection rate of 95%.

Advantages

- up to 99,1% seasonal efficiency* according to ErP
- up to 83.7% radiation factor**
- fully modulating control as standard
- large modulation range between 40-100% [comfort improvement]
- patented bluTek burner
- Stainless steel combustion chamber
- Low NO_x burners 35 mg/kWh***
- Pneumatic gas-air mixture
- Gas/air always in optimal ratio, no excess air, no energy loss
- Constant efficiency over the entire control range
- Blower with brushless EC motors – electric energy savings of 72%
- Unique reflector geometry
- Calorised radiant tubes



* measured according to 2015/1188 at deltaSchwank 1260U
** measured according to DIN EN 416 at deltaSchwank 950U
*** average value related to gross calorific value

calorSchwank & infraSchwank

Economic, sustainable & efficient



The Benchmark of Energy Efficiency

calorSchwank

calorSchwank is a proven product technology being one of the most efficient tube heaters. The available power ranges between 15 and 120 kW make it suitable for industrial and commercial applications, distribution centres as well as sports and event buildings. In contrast to conventional products, the burner of calorSchwank is fully modulating as a standard - ensuring an economical and long-lasting lifespan. The calorSchwank is - like all other Schwank products - manufactured in Germany. The tube heater combines the optimised combustion at a ceramic burner plate with the proven design of radiant tubes and fully insulated reflectors. Thus, the device guarantees a high seasonal energy efficiency and noticeable energy savings compared to conventional heating systems.

infraSchwank

infraSchwank sets the industry standard for Schwank radiant heaters. The difference to the calorSchwank is that the reflector of infraSchwank is not insulated.

calorSchwank

High Temperature Resistant
Insulation of the Reflector



Advantages

- up to 89.9% seasonal efficiency*
- 70.8% radiation factor**
- fully modulating control as standard
- fully insulated reflector

infraSchwank



Advantages

- up to 82.9% seasonal efficiency*
- 60.2% Radiation factor**
- fully modulating control as a standard

[* measured according to 2015/1188 at calorSchwank D20/M+U / infraSchwank D50/M+L]

[** measured according to DIN EN 416 at D50/M+U / infraSchwank D50/M+L]

The Whisper Jet Burner

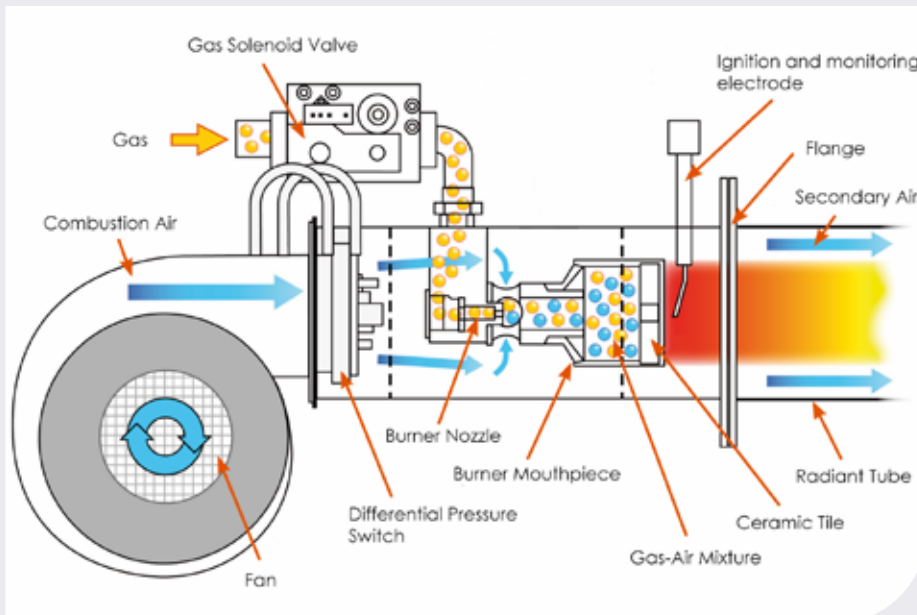
The Schwank Chartbuster

→ The Whisper-Jet Burner of calorSchwank & infraSchwank

The Whisper-Jet burner was developed especially for the needs of the customer and optimised for a low-emission and resource-saving combustion. The burner mouthpiece ensures a very long, laminar flame and thus an even heat transfer to the radiant tube.

All burners of Schwank tube heaters are equipped with a ModBus connectivity as standard. In combination with the specially developed SchwankControl Touch control system all burners can be individually controlled, error readings can be identified and predictive maintenance can be carried out. These features are also available to deltaSchwank.

→ Burner Technology infraSchwank / calorSchwank



Exhaust Systems

Exhaust Gas Ducts for every Application

We design individually calculated and system-certified flue gas systems, according to requirements of the application.

→ **Room air independent with Single chimney [LAS-System] System C**

- Energy saving by preheating the combustion air
Clean combustion air from outside
- Trouble-free when polluted air inside the building
- Aluminium or stainless steel



→ **Room air dependent with Single chimney System B**

- Aluminium or stainless steel



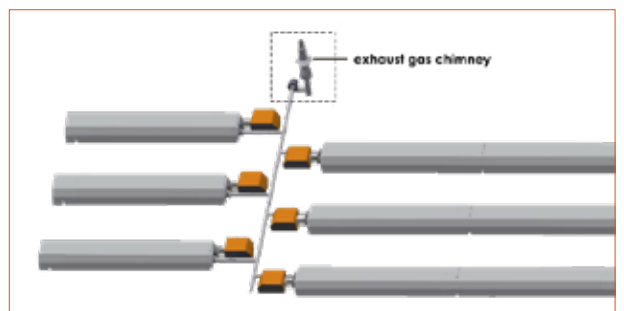
→ **Double chimney**

- One roof penetration for two units
- With or without combustion air intake from outside
- Aluminium or stainless steel



→ **Herringbone exhaust system System F**

- Combining the exhaust gas connections of the tube heaters into one system
- only one measuring point and roof penetration per room



Condensing Technology

Utilisation of Condensing Technology and Heat Recovery

tetraSchwank and hybridSchwank combine heat recovery and the utilisation of condensing technology in a state-of-the-art way, efficient Schwank tube heaters and an intelligent control to a heating system with up to 110% efficiency.



A. tetraSchwank

tetraSchwank uses the residual energy contained in the exhaust gas. The goal of Schwank engineers: heat recovery without an intermediate storage instrument. With a max. connected load of 50 kW, it recovers the thermal energy contained in the exhaust gas in a countercurrent process and feeds it directly back into the building.

tetraSchwank's condensing technology can be combined with a fresh air supply from outside.

B. hybridSchwank

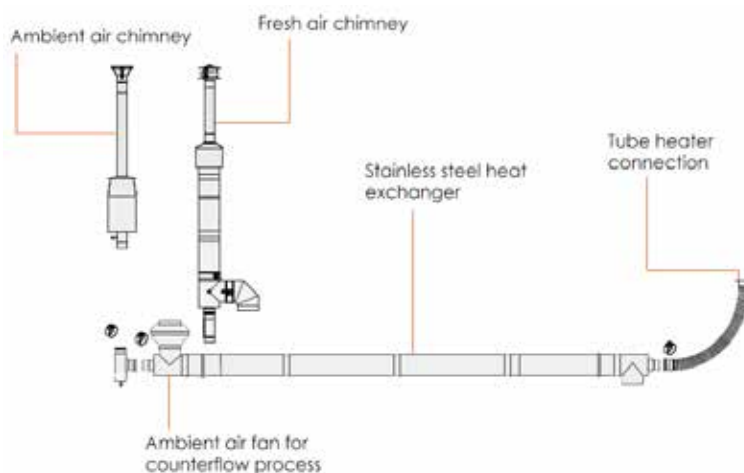
Like the tetraSchwank, hybridSchwank uses the residual heat contained in the exhaust gas. The recovered heat [hot water] can easily be fed back to other processes [space heating or service water].

Advantages of tetraSchwank & hybridSchwank

- Utilisation of calorific value and heat recovery
- up to 110% efficiency in combination with efficient Schwank tube systems



Heat Recovery System



Tube Heater

Newly invented

deltaSchwank

Sustainable Features



calorSchwank

All-Rounder



infraSchwank

Industrial Standard



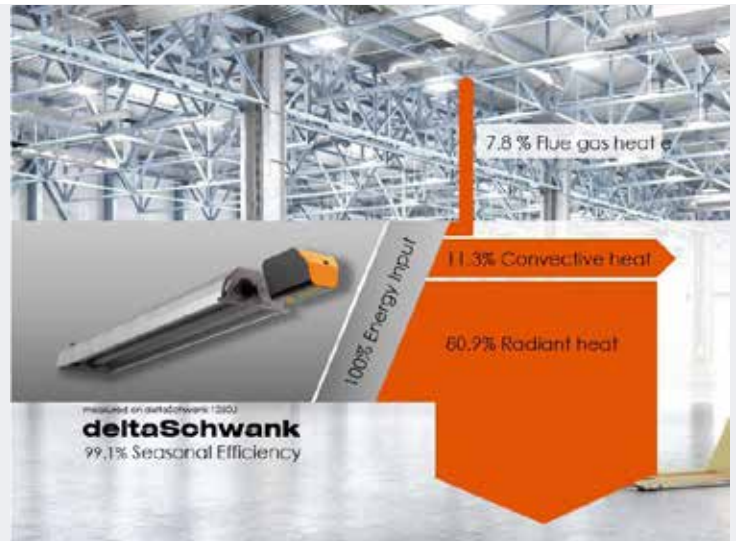
Made in Germany



- up to 99,1% seasonal efficiency*
- 83.7% Radiation factor**
- 35 mg/kWh NO_x
- fully modulating control as standard

[*Measured according 2015/1188 at deltaSchwank 1260U]

[** Measured according to DIN EN 416 at deltaSchwank 950U]



- up to 89.9% seasonal efficiency*
- 70.8%** Radiation factor
- 132 mg/kWh NO_x
- fully modulating control as standard

[* Measured according 2015/1188 at VRT D20/M+U]

[** Measured according to DIN EN 416 at D50/M+U]



- up to 82.9% seasonal efficiency*
- 60.2% Radiation factor**
- 133 mg/kWh NO_x
- fully modulating control as standard

[*Measured according 2015/1188 at infraSchwank D50/M+L]

** Measured according to DIN EN 416 at infraSchwank D50/M+L]



deltaSchwank

Sustainable Features



Your Advantages:

- up to 99,1% seasonal efficiency*
- Radiant Factor of up to 83.7%*
- highly reflective FERAN reflector
- Reflector housing completely insulated to minimise convection heat losses
- unique reflector geometry [95% emissivity]
- fully modulating control as standard
- Modulation range from 100% to 40% for ideal power setting to heat demand
- ModBus capability for optimised controllability and connectivity
- up to 55% less NO_x [35 mg/ kWh] and up to 20% less CO₂

Seasonal Efficiency*

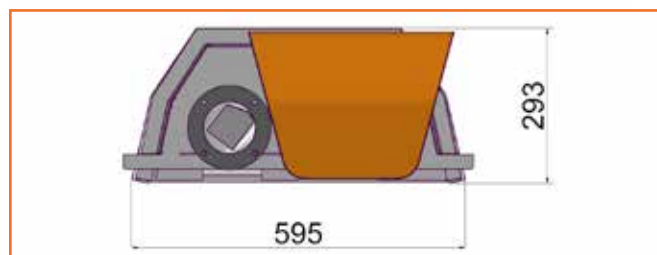
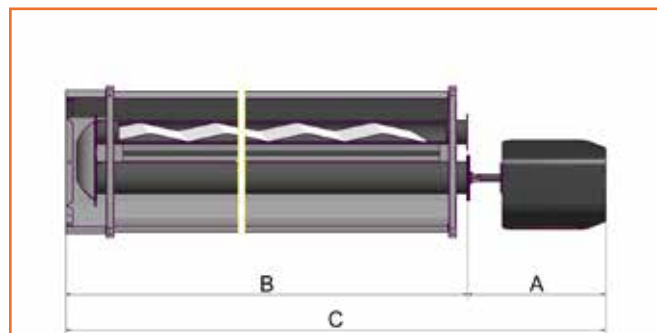
	310U	320U	625U	635U	950U	1260U
Nomnimal heat load [kW], Hi	10.0	20.0	25.0	35.0	48.0	58.0
Minimum heat load, Hi [kW]	7.5	10.0	12.5	17.5	25.0	29.0
Th. conductivity calorific value, Hi [%], maximal load	96.3	92.4	92.1	89.8	91.4	92.2
Calorific value, Hi [%], partial load	96.8	96.3	95.3	87.2	92.9	89.8
Radiation factor, Hi [%], partial load	80.9	80.6	82.2	83.2	82.0	83.4
Radiation factor, Hi [%], nominal load	80.6	78.1	80.3	78.6	83.7	80.9
Seasonal Efficiency [%]	97.3	99.0	98.9	97.4	97.6	99.1

* measured according to DIN EN 416 at DVGW test laboratory

Min. connection pressure

	15-50 kW	60 kW
Natural gas H	15 mbar	20 mbar
Natural gas L	20 mbar	30 mbar
Propane	40 mbar	40 mbar

Dimensions dellaSchwank



Dimensions	310	320	625	635	950	1260
A [mm]	626					
B [mm]	3184		6102		9130	12055
C [mm]	3810		6728		9756	12681
kg	114		181	186	254	326

	310	320	625	635	950	1260
Nominal heat load [kW]	10	20	25	35	48	58
Connection value natural gas H/G 20 [m³/h]*	1.50	2.00	2.51	3.51	4.81	5.82
Connection value natural gas L/G 25 [m³/h]**	1.17	2.33	2.92	4.08	5.60	6.77
Connected load propane L/G 31 [kg/h]***	0.78	1.55	1.94	2.72	3.73	4.51
Max. connection pressure [natural gas / propane]	65 mbar					
Connection supply air / exhaust air [mm]	100					
Power consumption [W]	30	45	55	75	175	300
Protection class	IP 20					
Gas connection [external]	R1/2"				R3/4"	
Electrical connection	230 V / 50 Hz ~					
Ignition / Monitoring	Spark ignition and ionisation monitoring by automatic burner control					
CE Identification	CE-0085CS0487					

calorSchwank

All-Rounder



Made in Germany



Your Advantages:

- up to 88.3% seasonal efficiency*
- 70.8% Radiation factor*
- 132 mg/kWh NO_x
- fully modulating control as standard

Seasonal Efficiency*

	15/1 L	15 M+L	20/1 L	20 M+L	30/1 L	30 M+L	40/1 L	40 M+L	50/1 L	50 M+L	60/1 L	60 M+L
Nomnimal heat load [kW], Hi	15.0	15.0	19.0	19.0	29.0	29.0	39.0	39.0	49.0	49.0	60.0	60.0
Minimum heat load, Hi [kW]	/	11.2	/	14.3	/	22.0	/	30.0	/	38.0	/	48.0
Th. conductivity calorific value, Hi [%], maximal load	90.2	90.2	90.1	90.1	90.2	90.2	90.2	90.2	91.1	91.1	91.6	91.6
Calorific value, Hi [%], partial load	/	89.9	/	89.7	/	89.9	/	89.8	/	91.0	/	91.1
Radiation factor, Hi [%], nominal load	67.2	67.2	70.2	70.2	69.8	69.8	72.7	72.7	71.4	71.4	70.2	83.4
Radiation factor, Hi [%], partial load	/	66.7	/	69.5	/	69.2	/	71.8	/	70.8	/	69.5
Seasonal Efficiency [%]	81.2	83.9	82.9	85.4	83.3	85.8	84.8	87.0	85.3	87.8	85.4	87.2

Seasonal Efficiency*

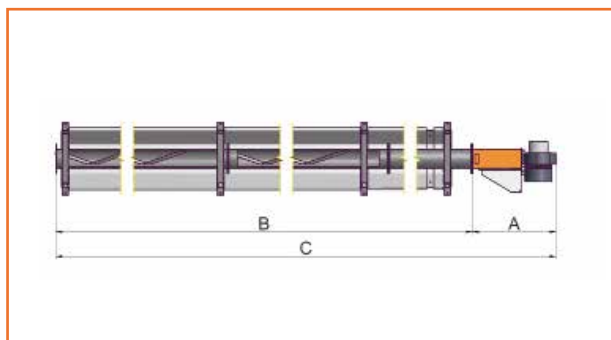
	15/1 U	15 M+U	20/1 U	20 M+U	30/1 U	30 M+U	40/1 U	40 M+U	50/1 U	50 M+U	60/1 U	60 M+U
Nomnimal heat load [kW], Hi	15.0	15.0	19.0	19.0	29.0	29.0	39.0	39.0	49.0	49.0	60.0	60.0
Minimum heat load, Hi [kW]	/	11.2	/	14.3	/	22.0	/	30.0	/	38.0	/	48.0
Th. conductivity calorific value, Hi [%], maximal load	93.4	93.4	93.4	93.4	92.6	92.6	92.9	92.9	92.2	92.2	92.6	92.6
Calorific value, Hi [%], partial load	/	93.8	/	93.9	/	92.1	/	93.2	/	91.8	/	92.2
Radiation factor, Hi [%], nominal load	69.8	69.8	70.2	70.2	70.2	70.2	69.2	69.2	70.8	70.8	70.6	70.6
Radiation factor, Hi [%], partial load	/	69.2	/	70.8	/	71.0	/	68.3	/	70.0	/	69.7
Seasonal Efficiency [%]	85.5	88.8	86.1	89.9	85.8	88.7	85.9	88.6	86.1	88.3	86.5	88.4

* measured according to DIN EN 416

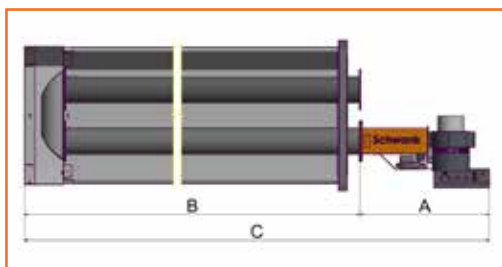
Min. connection pressure

	15-50 kW / 80-100 kW	60 kW / 120 kW
Natural gas H	15 mbar	20 mbar
Natural gas L	20 mbar	30 mbar
Propane	40 mbar	40 mbar

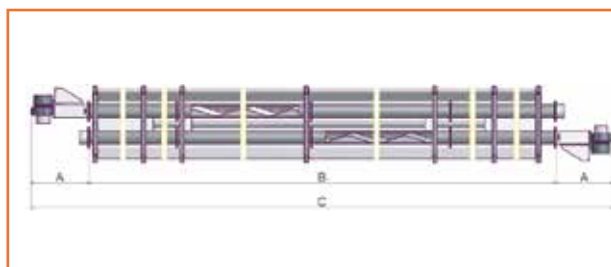
Dimensions calorSchwank L



Dimensions calorSchwank U



Dimensions calorSchwank LL



Dimen- sions	15 U	20 U	30 U	40 U	50 U	60 U	15 L	20 L	30 L	40 L	50 L	60 L	80 LL	100 LL	120 LL
A [mm]	502				502		502				502		502	502	
B [mm]	3206	4605	6257	9155	12205	13695	6100		9150	13620	18000	19570	13620	18000	19490
C [mm]	3708	5197	6759	9657	12707	14197	6602		9652	14122	18502	20072	14622	19004	20494
D [mm]	345				345		345				345		345	345	
kg	68		95	119	171	221	79		112	161	205	222	219	306	335

	15 U/L	20 U/L	30 U/L	40 U/L	50 U/L	60 U/L
Nominal heat load [kW]	15.0	19.0	29.0	39.0	49.0	60.0
Connection value natural gas H/G 20 [m³/h]*	1.50	1.91	2.91	3.91	4.92	6.02
Connection value natural gas L/G 25 [m³/h]**	1.75	2.22	3.38	4.55	5.72	7.00
Connected load propane L/G 31 [kg/h]***	1.17	1.48	2.25	3.03	3.81	4.66
Max. connection pressure [natural gas / propane]	60 mbar					
Connection supply air / exhaust air [mm]	Ø 100					
Power consumption [W]	104				91	
Protection class	IP 20					
Gas connection [external]	R1/2"			R3/4"		
Electrical connection	230 V / 50 Hz ~					
Ignition / Monitoring	Spark ignition and ionisation monitoring by automatic burner control					
CE Identification	CE-0085BO0037					

infraSchwank

Industrial Standard



Made in Germany



Your Advantages:

- up to 82.9% seasonal efficiency*
- fire-aluminised reflector for up to 60.2% radiation factor*
- fully modulating control as standard
- ModBus capability for optimised controllability and connectivity

Seasonal Efficiency*

	15/1 L	15 M+L	20/1 L	20 M+L	30/1 L	30 M+L	40/1 L	40 M+L	50/1 L	50 M+L	60/1 L	60 M+L
Nomnimal heat load [kW], Hi	15.0	15.0	19.0	19.0	29.0	29.0	39.0	39.0	49.0	49.0	60.0	60.0
Minimum heat load, Hi [kW]	/	11.2	/	14.3	/	22.0	/	30.0	/	38.0	/	48.0
Th. conductivity calorific value, Hi [%], maximal load	90.6	90.6	90.0	90.0	91.4	91.4	91.8	91.8	91.4	91.4	91.4	91.4
Calorific value, Hi [%], partial load	/	91.0	/	90.5	/	91.4	/	92.2	/	91.7	/	91.6
Radiation factor, Hi [%], nominal load	55.7	55.7	56.9	56.9	59.9	59.9	59.1	59.1	60.2	60.2	59.4	59.4
Radiation factor, Hi [%], partial load	/	55.2	/	56.4	/	59.4	/	58.6	/	59.7	/	58.9
Seasonal Efficiency [%]	75.7	79.0	76.2	79.4	79.5	82.3	79.7	82.7	80.2	82.9	79.8	82.2

Seasonal Efficiency*

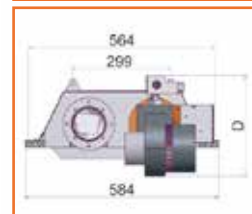
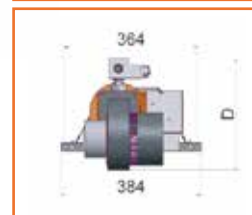
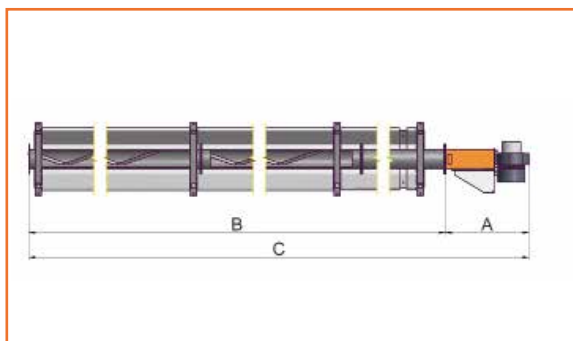
	15/1 U	15 M+U	20/1 U	20 M+U	30/1 U	30 M+U	40/1 U	40 M+U	50/1 U	50 M+U	60/1 U	60 M+U
Nomnimal heat load [kW], Hi	15.0	15.0	19.0	19.0	29.0	29.0	39.0	39.0	49.0	49.0	60.0	60.0
Minimum heat load, Hi [kW]	/	11.2	/	14.3	/	22.0	/	30.0	/	38.0	/	48.0
Th. conductivity calorific value, Hi [%], maximal load	92.0	92.0	92.4	92.4	91.7	91.7	91.8	91.8	92.4	92.4	92.0	92.0
Calorific value, Hi [%], partial load	/	92.4	/	92.4	/	92.1	/	92.4	/	92.7	/	92.2
Radiation factor, Hi [%], nominal load	55.7	55.7	57.6	57.6	59.3	59.3	57.8	57.8	58.2	58.2	57.6	57.6
Radiation factor, Hi [%], partial load	/	55.1	/	57.1	/	58.8	/	57.2	/	57.7	/	57.0
Seasonal Efficiency [%]	77.0	80.2	78.7	81.6	79.5	82.7	79.0	82.1	79.9	82.8	79.3	81.8

* measured according to DIN EN 416 at DVGW test laboratory

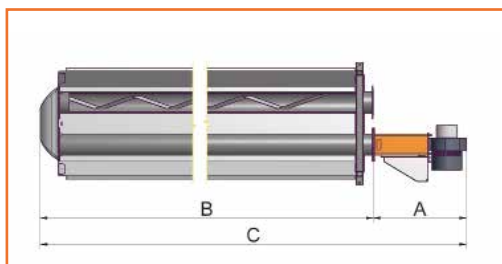
Min. connection pressure

	15-50 kW / 80-100 kW	60 kW / 120 kW
Natural gas H	15 mbar	20 mbar
Natural gas L	20 mbar	30 mbar
Propane	40 mbar	40 mbar

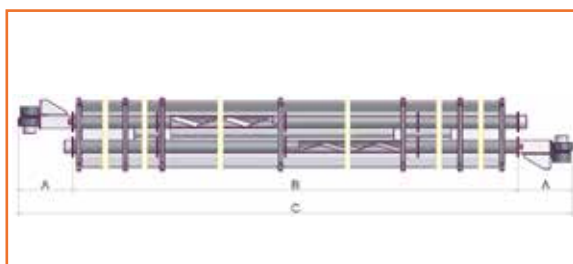
Dimensions infraSchwank L



Dimensions infraSchwank U



Dimensions infraSchwank LL



Dimen- sions	15 U	20 U	30 U	40 U	50 U	60 U	15 L	20 L	30 L	40 L	50 L	60 L	80 LL	100 LL	120 LL
A [mm]	502				502		502				502		502	502	
B [mm]	3138	4628	6188	9088	12138	13627	6100	9150	13620	18000	19570	13620	18000	19490	20494
C [mm]	3640	5130	6690	9590	12640	14130	6602	9652	14122	18502	20072	14622	19004	20494	20494
D [mm]	345				345		345				345		345	345	
kg	54	75	92	130	166	185	57	57	80	114	142	153	165	225	245

	15 U/L	20 U/L	30 U/L	40 U/L	50 U/L	60 U/L
Nominal heat load [kW]	15,0	19,0	29,0	39,0	49,0	60,0
Connection value natural gas H/G 20 [m³/h]*	1,50	1,91	2,91	3,91	4,92	6,02
Connection value natural gas L/G 25 [m³/h]**	1,75	2,22	3,38	4,55	5,72	7,00
Connected load propane L/G 31 [kg/h]***	1,17	1,48	2,25	3,03	3,81	4,66
Max. connection pressure [natural gas / propane]	60 mbar					
Connection supply air / exhaust air [mm]	Ø 100					
Power consumption [W]	104				91	
Protection class	IP 20					
Gas connection [external]	R1/2"			R3/4"		
Electrical connection	230 V / 50 Hz ~					
Ignition / Monitoring	Spark ignition and ionisation monitoring by automatic burner control					
CE Identification	CE-0085BO0037					

→ Innovative. Experienced. Competent.

Experience creates reliability.

For decades, the name Schwank has been synonymous with high-quality and economical heating and cooling systems. As market leader for gas infrared heating systems, Schwank has extensive experience. More than 200,000 satisfied customers and more than 2.5 million manufactured units speak for themselves.

As a German manufacturer, we stand by our claim to deliver products and services of the highest quality. Each of our products guarantees an economical and CO₂ & NO_x-minimised operation.



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