

Schwank. Innovative Heating Solutions

**Energy-efficient heating systems for
industrial buildings, distribution centers,
sports arenas and outdoors.**



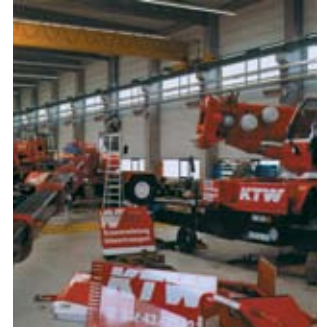
Schwank
INNOVATIVE HEATING SOLUTIONS



Schwank.

For Industrial Buildings, Distribution Centers, Sports Arenas and Outdoors.

Our innovative achievements have set the pace - for 75 years now. Schwank heating solutions are used in a variety of areas: industrial and commercial buildings, showrooms, sports arenas and stadiums, distribution centers, service garages, car washes, restaurants, cafés, and churches.



Production facilities



Showrooms



Sports arenas



Distribution centers



Churches



Restaurants and Cafés



Sports facilities



Service garages and Car washes

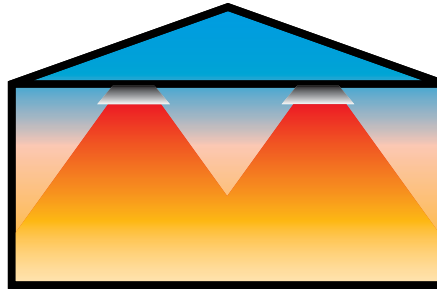
Schwank. Leading Edge Technology.

The application of a Schwank infrared heating system offers significant advantages:

- High energy-efficiency: 30% - 60% energy savings vs. conventional systems
- High quality, durable, comfortable heat
- Very short heat-up times
- Possibility of partial area heating
- No dust swirls and drafts
- Heating of outdoor areas



With conventional heating, hot air rises to the ceiling, away from the area where it is needed.



Infrared radiant energy, however, heats people, the floor and objects. Only secondarily, is the air warmed. Therefore, heat is placed where it is needed.



"We were pioneers, when in 1965 we were one of the first to install Schwank heaters in the US to heat our plants. With that decision we saved a lot of energy. Over the years we have tried out other brands of gas-infrared-heaters, but we returned to Schwank. The quality and the service from Schwank are far superior compared to others. Without a doubt Schwank will be our choice for our next heating project."

Richard Ross, President,
Ross International Corpora-
tion, Hauppauge, NY



Mr. Graham Hughes, consultant for Chelsea's building services technology says about Schwank: *"Schwank stadium heating has clearly exceeded all our expectations. The warmth is well received by all the VIP's, and they really appreciate comfort on cold days."*

Schwank. Technology of the Sun.



Our product is heat. Comfortable heat. The principle has been derived from the sun. Infrared energy from the sun penetrates the air nearly loss-free and only turns into warmth only once making contact with people and surfaces.

The same applies for our infrared technology:

The formula demonstrates that a desired comfort temperature can be achieved with a lower air temperature. The balance is created by the radiant temperature: **As a result, you save energy!**

$$t_{\text{comfort}} = \frac{t_{\text{air}} + t_{\text{radiant}}}{2} \text{ with } t_{\text{air}} < t_{\text{radiant}}$$

t_{comfort} = Comfort Temperature

t_{air} = Air Temperature

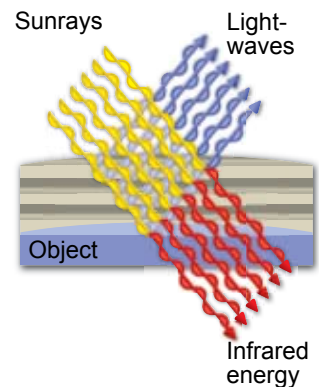
t_{radiant} = Radiant Temperature

Schwank.

Natural Heat by Infrared Radiation.

An example of the effectiveness of infrared radiant heat is well illustrated during the winter time: in the shade the ambient temperature is perceived as being cold – you feel cold. When the sun comes out, infrared energy is emitted and converted to heat. At the same air temperature you now feel pleasantly warm. This is exactly the impact of Schwank technology in your building:





- Air is not warmed up primarily. As a result, no hot air cushion develops below the roof.
- A comfortable room temperature can be reached with a lower air temperature. This saves significant energy.
- The lower differential temperature between inside and outside the building further reduces heat losses.
- Consequently, high energy savings of 30% - 60% are achieved.



Schwank. Your Single Source.

Which heating system is the best? A single heating system which perfectly suits all applications does not exist. Our well-balanced product portfolio proposes the best solution for your heating needs. Based on this diverse product assortment we can provide you with a neutral system comparison.



Systems	Warm air heaters		Radiant heaters	
	Direct 	Indirect 	Luminous heaters 	Tube heaters 
Features				
Equipment Efficiency	good	good	very good	very good
Electrical Energy	significant	significant	minimal	low
Noise	yes	yes	no	limited
Air movement	yes	yes	no	no
Heat-up-time	short	lengthy	very short	short
Partial Heating	Limited possibility	Limited possibility	possible	possible

Source: Natural Gas for Heating Large Buildings, Federal Association of German Gas and Water Economics, 2003

Schwank. Customized Solutions: Luminous Heaters.

These compact appliances are unbeatable in terms of both economic efficiency and longevity. The infrared energy is radiated by ceramic tiles heated by fuel combustion up to 1740 °F [950 °C]. Schwank's product range includes the world's most energy-efficient infrared radiant luminous heater.

Our luminous heaters with their outstanding reputation are ideal for space heating industrial buildings, warehouses, sports arenas, hangars, football stadiums, patios and diverse outdoor applications.



Schwank.

Customized Solutions: Tube Heaters.

Schwank infrared radiant tube heaters are ideal for a wide range of heating applications, including those with average to low ceiling heights. A flame is shot into the steel tube where it heats up the surface, 1020 °F [550 °C] and radiates infrared energy. Thanks to the new and innovative Whisper-Jet burner, Schwank radiant tube heaters provide an extremely long and laminar flame resulting in the highest efficiency and performance.



Schwank. Customized Solutions: Patio Heaters.



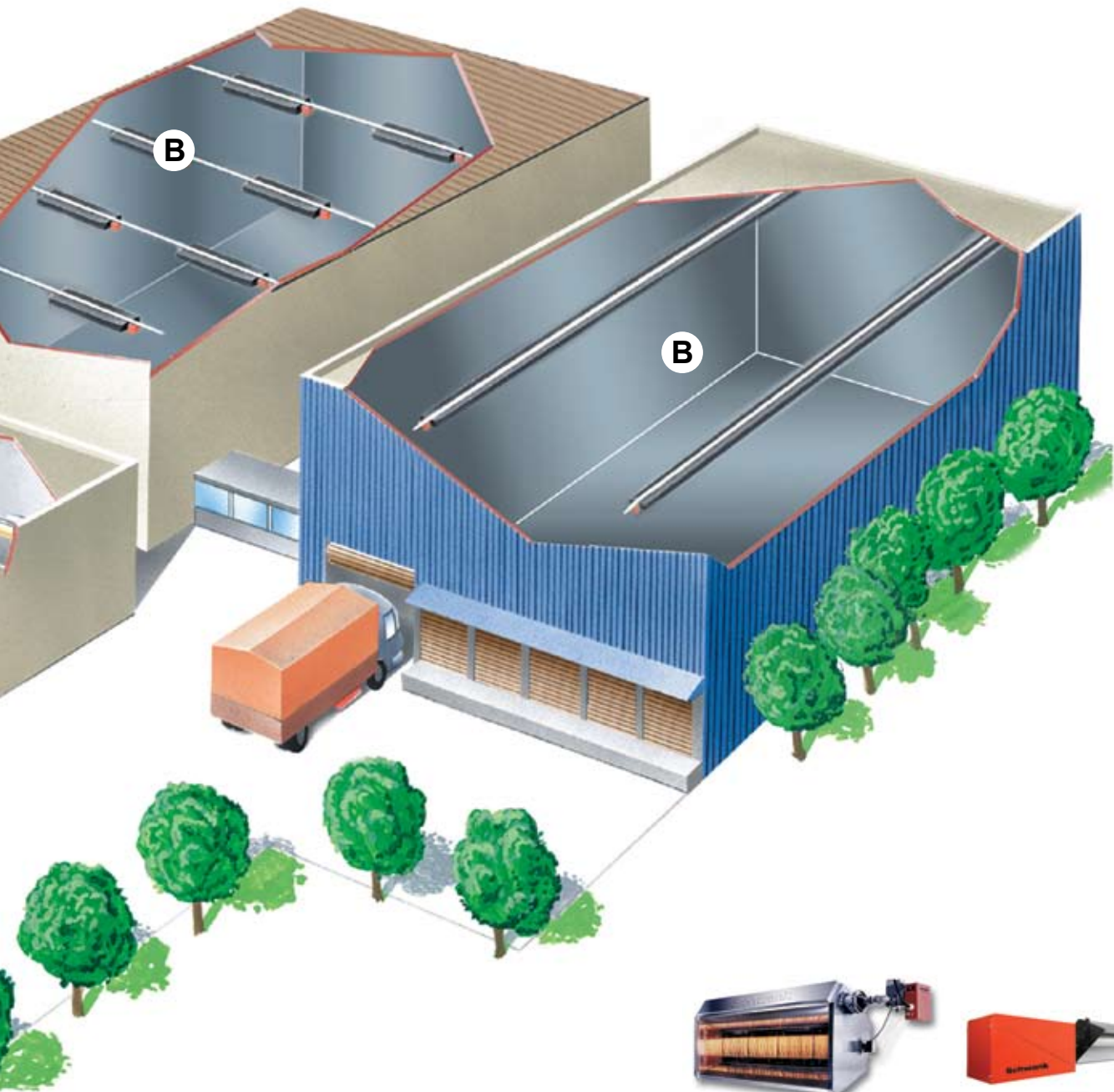
Why wait for hot summer days to do booming patio business. With patioSchwank radiant heaters, your patio will be the first to open in the spring – the last to close in the fall - and all season long your tables can be full 'til last call.

patioSchwank radiant heaters multiply the number of days you earn maximum sales from your patio, because you – not Mother Nature – control the comfort level of your patrons. You could even open on a winter day [existing patioSchwank operators have held special event parties on their patios in mid February - in Canada!].

Add it all up and it's easy to see why patioSchwank heaters offer payback in as little as one season. So don't be left cold by inferior patio heaters. Choose the patio heater that is designed and built for commercial operation – patioSchwank: economical to buy – and even more economical to operate.

Schwank. Individual Solutions for Buildings.





Ⓐ Luminous Heater



Ⓑ Tube Heater

Schwank. Infrared Luminous Heaters.



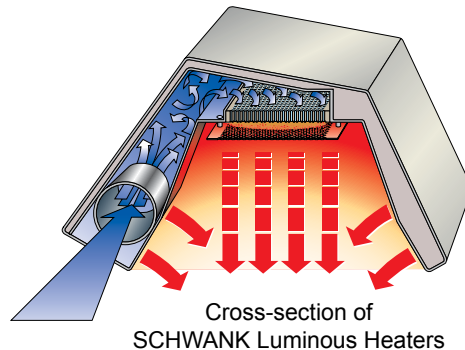
Bernd H. Schwank GmbH
President Schwank Group
*"We go to great lengths
to meet your heating
needs."*

The performance requirements we set for our infrared-gas radiant heaters demand the highest standards of precision in production. All metal components are made of aluminium plated steel and are joined together by a pressure fastening process. This guarantees effective protection against corrosion and ensures high performance.

Typical applications include:

- Manufacturing, warehouse and commercial facilities
- Patios
- Sports Arenas
- Football Stadiums
- And more

Schwank is the worldwide leader in the industry.

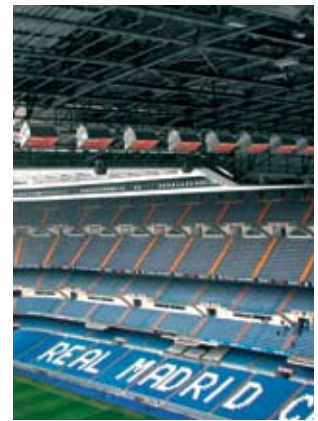


Product Solutions.



The Benefits

- High energy efficiency, 60% or greater energy savings vs. conventional systems
- Even distribution and comfortable heat
- Economical and long-lasting
- Possibility of heating partial areas and single workstations
- Possibility of differentiated temperatures within a building
- No air movement or drafts
- No dust swirls



Schwank. Infrared Tube Heaters.



Bernd H. Schwank GmbH
President Schwank Group
"Concerning radiant tube heaters, we have over 30 years insight."

Our radiant tubes are always in the right place when a wide distribution of radiant heat coupled with economical heating are required. Saving energy is combined with a high level of comfort and warmth.

With our radiant tube factories in Germany, North America and Russia, Schwank is clearly one of the leading manufacturers of radiant tubes worldwide.



Product Solutions.



The Benefits

- High energy efficiency, up to 60% energy savings vs. conventional systems
- Even distribution and comfortable heat
- Economical and long-lasting
- Possibility of heating partial areas and single workplaces
- Possibility of differentiated temperatures within a building
- No air movement or drafts
- No dust swirls
- Sealed combustion



Schwank. Ceramic Tiles & Burners.



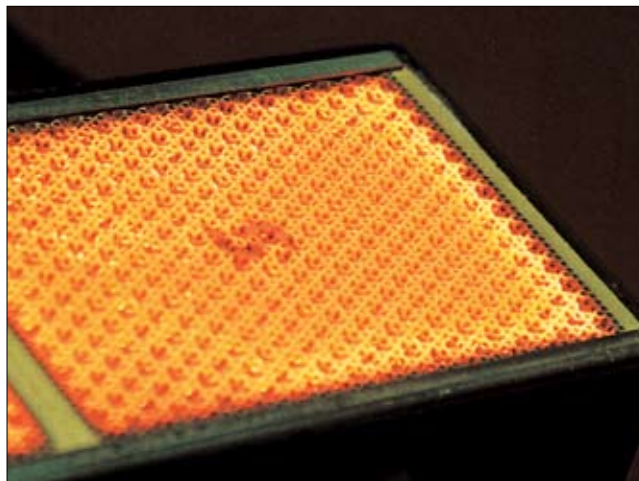
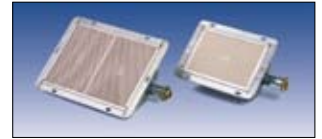
Bernd H. Schwank GmbH
President Schwank Group
*"When it's about heat,
you are in the best
hands with Schwank."*

The name Schwank is known world-wide for its technology of infrared-gas burners for heating and process applications.

The development, research, manufacturing and application of ceramic burners has a long tradition within Schwank.

The world's first infrared-gas burner with a ceramic tile was developed by Günther Schwank in 1937, the founder of the Schwank Group.

Since then, Schwank being a leading manufacturer of ceramic tiles, has continuously advanced the ceramics & burners to generate the maximum performance and efficiency.



Product Solutions.

Ceramic Tiles & Burner Applications include:

- Commercial/industrial space and spot heat:
 - Manufacturing facilities
 - Warehouses
 - Service garages
 - Aircraft hangars
 - Outdoor venues and patios
 - Sports stadiums
 - Process heat applications:
 - Drying of paper, textiles, paint
 - Condensation and corrosion protection
 - Food cookers and grills: Döner, Kebab & Gyros grills, chicken roasters, and barbecue grills
 - Infrared stove-tops
 - Road construction burners, weed control appliances
-

SCHWANK has the Leading Technology

Heat Stability & Quality:

The extremely high quality ceramic is a result of elaborate and careful selection of raw materials together with precise manufacturing technology. The proprietary design of the surface structure and perforations in the ceramic tile creates unique performance characteristics. Clean combustion, continuous performance and longevity are assured.

The material composition creates high mechanical stability, which can withstand high surface temperatures of up to 2200 F° [1200 °C]. Durable Schwank ceramic tiles withstand thermal, corrosive chemical and mechanical stress. It's no surprise that Schwank ceramic tiles produced over 50 years ago are still in use.

Low Emissions & Economic Operation:

Clean combustion and reduced heating system input requirements mean less pollution. Because combustion takes place just below the ceramic surface, heat transfer to the tile is instantaneous. The flame temperature is greatly reduced resulting in extremely low emission of NOx.

Research & Development Services:

Schwank offers a broad number of ceramic burners and tiles to numerous prestigious clients in order to market the highest standard of performance and efficiency.

Our services include:

- Custom development of tiles
- Assembly & sealing of ceramic tiles
- Advanced combustion technology
- Optimised synergies between burner, pre-mix chamber, ignition, combustion control and heat exchanger.



Bernd H. Schwank GmbH
President Schwank Group
"When it's about saving of energy and carbon footprint, you are in the best hands with Schwank."

Schwank. A Powerful Partner.

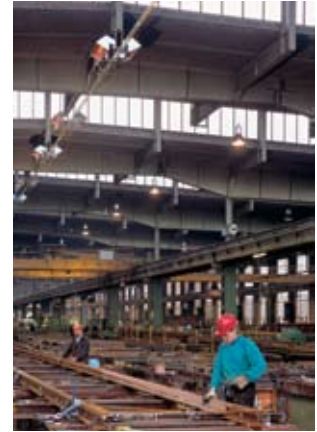
- Worldwide leader in infrared gas heating
- Inventor of infrared gas-heaters
- 30%-60% energy savings and reduction of carbon footprint
- Over 1 million heating appliances sold
- Leading edge technology and innovation
- Individual solutions from one source: luminous heaters, tube heaters, patio heaters
- Full design, installation and service support



Schwank. Quality and Service.

Satisfied customers are our motivation
to exceed expectations:

- High energy efficiency: 30% - 60% energy savings vs. conventional systems
- Quick Return on Investment
- Professional advice
- Neutral system comparison and energy cost saving analysis
- Easy installation



Mr. Achim Backhaus,
Area Manager of Hauhinco
says about Schwank:
*“Schwank turned out to be
a quick and reliable partner
- in all phases - from design,
to installation and after-
sales service. It is evident,
that Schwank benefits from
70 years of product expe-
rience and service excel-
lence.”*



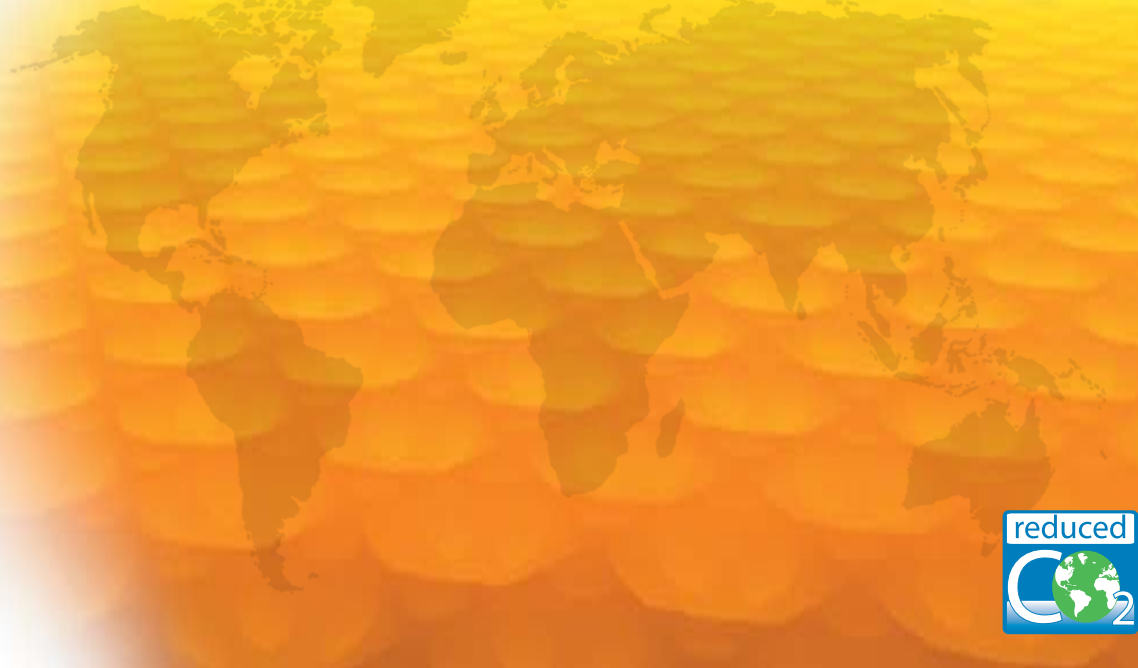
Schwank. Innovative Heating Solutions



Schwank companies in:

USA ▪ Canada ▪ Germany ▪ Austria ▪ Benelux ▪ Czech Republic ▪
France ▪ Great Britain ▪ Hungary ▪ Poland ▪ Romania ▪ Russia

Distribution in more than 40 countries worldwide



Schwank
INNOVATIVE HEATING SOLUTIONS



USA

Schwank USA, Inc. • P.O. Box 988 • 2 Schwank Way @ Hwy. 56N • Waynesboro, GA 30830

Tel.: 1-877-446-3727 • Fax: 1-866-361-0523

E-mail: csr@schwankgroup.com • Internet: www.schwankgroup.com



Canada

Schwank Ltd. • 5285 Bradco Blvd. Mississauga • ON L4W 2A6