

Schwank

Gas-Infrared-Heaters

50 YEARS
WARMLY
RECOMMENDED
Schwank

THE PRINCIPLE OF GAS-INFRA-RED-HEATERS



Schwank
WARMLY RECOMMENDED



ECONOMIC, FAST, ENVIRONMENTALLY AND INSTALLATION FRIENDLY



We deliver heat - agreeable heat - radiation-heat.

We simply have copied the principle of the sun:

The infrared-rays (heat-radiations) penetrate the air virtually loss-free and become active only where they impact. **Heat is formed.**

A comfortable temperature in connection with the environment-air is the result. One can show this physical relationship on a simple formula:

$$t_E = t_L + t_S$$

felt room radiation
temperature temperature temperature

We reduce heat-loss

This connection enables a pleasant felt-temperature in spite of a low air-temperature. The radiation-heat manages the balance.

The consequently greater difference between indoors- and outside- air-temperature lowers the transmission- and ventilation-losses:

You save energy!

Furthermore, radiation-heat can be positioned - if wished - „point-exactly“ and used for spot heating!

We generate infrared-heat, that is suitable for nearly all halls, greater areas and outdoor heating.

It depends on the project which solution offers more advantages, with gas-infrared-heaters or with radiant tube heaters (Fig. 1 u. 2)

Modern radiant heaters for all needs

With diverse appliance-variations, system-solutions and exhaust-system we have certainly the correct solution for you: From work-place heating, frost-free-warehouses up to the complete heating of gigantic shipyard-halls; from heating of sports halls and stadium-platforms to temporary heating of for example churches.

Our project-engineers like to adopt the planning of your heating-system. A service, that you get from us free of charge.

On request, we provide also the complete installation package, put the installation into operation and execute the regular maintenance.

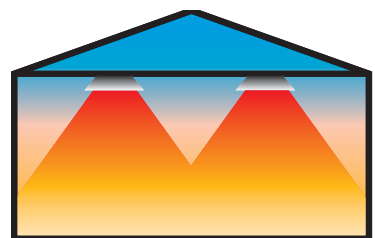
Principle points

- Energy-saving and environmentally friendly
- even and comfortable heat
- price-conscious and long working life
- Part- and work-place-heatings
- varied temperatures in one area
- no air-movements
- no draughts
- no dust spreading

Fig. 1

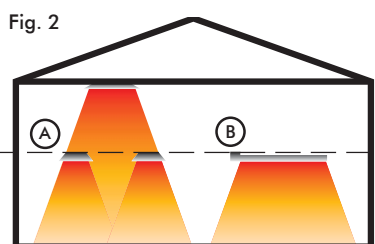


Conventional heaters extract the warmed up air from the usable area upward.



Using Schwank Infrared heating-systems the heat is where it is used.

Fig. 2

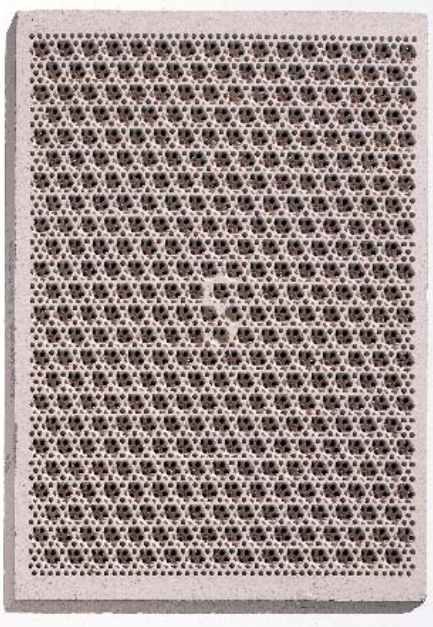


gas-infrared-heaters (A) and radiant tube heaters (B)



Schwank

Service



- **Energy cost comparison**

We will calculate and compare for you the energy costs of the suitable heating systems. The result: The best price/performance ratio for you!

- **Project Planning**

When a system or a combination has been chosen, we will plan the entire execution.

- **Quotations**

Clear, detailed and competitive: That's what our quotations are like.

- **Execution**

Our heating systems are installed in the shortest time. Naturally, the result of the greatest professionalism.

- **Support in gaining official approval**

If heating systems are subject to mandatory approval, we will act as your partner to attain this without difficulty.

- **Commissioning**

We start the system running and stay until everything is running smoothly.

- **Maintenance**

Our complete systems require little maintenance. If you want, we will maintain them or support your local fitter.

- **Repairs**

If problems occur, just call. We will keep your system running the way you want it to.

- **Service**

We remain at your service at all times after our systems have been commissioned. We will advise you and serve you in all matters concerning heating systems.

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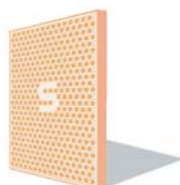
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Schwank

Gas-Infrared-Heaters

The technology of gas-infrared-heaters

Our heaters have it in itself. In the truest sense of the word, because the installation-efficiency of at least 95% is no coincidence.

The Delta-Mixing-Chamber

The more balanced the gas-air-mixture of the gas-infrared-heater the better is the heat radiation. The patented **delta-mixing-chamber** ① of our heaters takes care of it: The emulsion tube ② absorbs the precisely measured gas and swirls it with air to an ignitable gas-air-mixture, that distributes evenly in the delta-mixing-chamber and is pre-heated. With the gained buoyancy the ceramic slab ③ is distributed at each point with combustion-energy evenly, even when low gas-connection-pressure.

Small suns with big effect

From the delta-mixing-chamber the gas-air-mixture streams through thousands of smaller channels of a ceramic slab ④, the heart of each gas-infrared-heater. The ceramic slab, an invention by us, is put in today by all producing gas-infrared-heaters.

In the surface of the ceramics slab, the gas-air-mixture burns and generates thousands of small flames ⑤. The created combustion-heat heats the ceramic slab directly. Comfortable radiation-heat ⑥ is set free with a surface-temperature of approximately 900° C.

A particular surface-structure and formula of the ceramic slabs optimizes the radiation-harvest additionally. Caused by the fast heat transfer in the ceramic slab the combustion runs "cooled". That means: The controlled combustion of non-polluting natural gas and liquid-gas extremely takes place pollutant-poor. The NO_x-Values are under 10 ppms. With SCHWANK gas-infrared-heaters you have chosen a pronounced non-polluting and modern heating system.

The „combined radiation“

The special construction of SCHWANK gas-infrared-heaters makes it even possible to convert waste heat into heat-radiation: The reflectors ⑦ are warmed up until 500° C and the gained additional radiation ⑧ increases the efficiency. Therefore our gas-infrared-heaters work on the basis

of two radiation-mechanisms: the light - and darkness-radiation, the „combined radiation“.

Security and Control

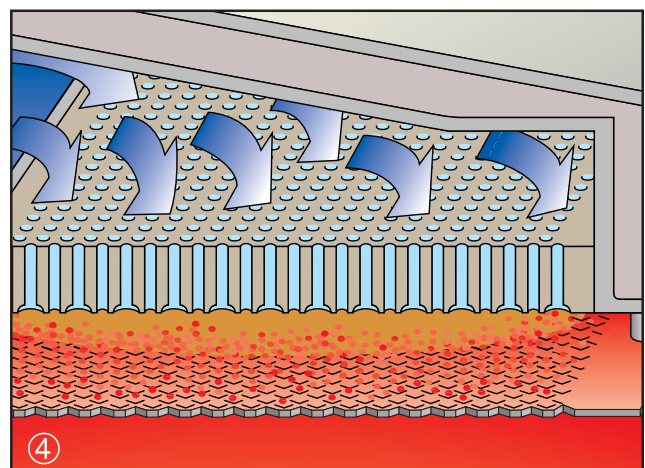
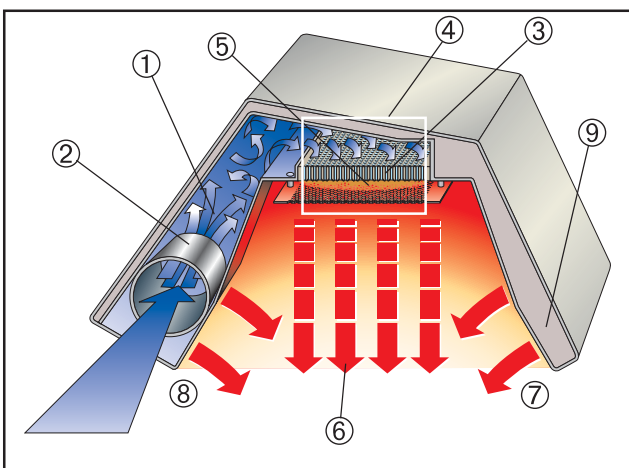
Security is top priority for all of our gas-infrared-heaters.

During the operation our heaters are monitored by a microprocessor controlled ionisation-flame-control. When gas pressure gets too low, the voltage breaks down or combustion stops, the gas-valve closes automatically. Non-burned gas has no chance to leave the system.

Our heating-systems can be regulated according to demand of singleswitchboxes up to a central building control.

The heater construction

We put the highest quality into our products: With costly special-tools all appliance-parts are produced from high-quality, aluminum-coated sheet metal and are mounted in a "press-and-join-process" (special manufacturing process). This guarantees a high corrosion-protection and secures the high quality-standard for many years.



Schwank

Gas-Infrared-Heaters

primoSchwank

The inexpensive alternative with low investment-costs.



With the primoSchwank, we place standards.

This optimized ceramic slab surface, the technology of the "combined radiation" in connection with the pre-heated gas-air-mixture guarantees the high radiation-efficiency and therefore a noticeable energy-saving.

supraSchwank

Fully insulated with 20% less gas consumption and low energy costs

The supraSchwank, our top-model, convinces by its sensational radiation-efficiency. This is the output (heat load) in accordance to the gas-input, that the appliance converts directly to radiation (measured european standard ENV 1259)

With the supraSchwank you can face the insecurity-factor "development of energy-costs" better. 20 % less gas consumption opposite the primoSchwank with only a small higher investment-costs by:



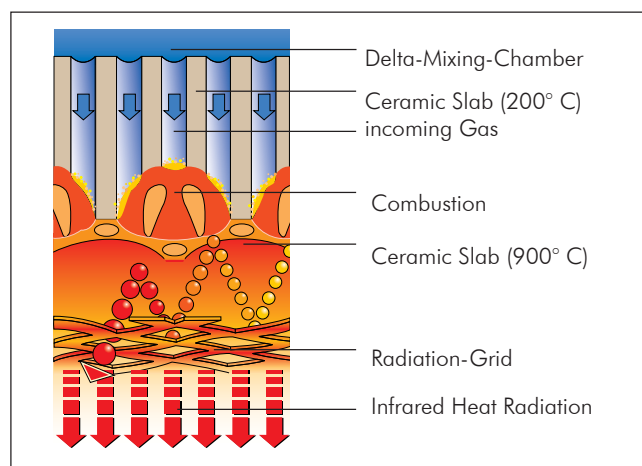
to the ceramic slab. So, a continuous heat-exchange takes place between ceramic slab and grid, that leads to heating on both sides and the level of performance of the supraSchwank considerably increases.

More performance by full-insulation ®:

The supraSchwank uses the waste heat from combustion very thoroughly. The special casing-insulation makes it possible: It prevents the waste heat from rising to the roof-area. This "caught" heat is transferred by the reflectors into the area to be heated. This gives additional radiation, which further increases the performance level of the supraSchwank .

More performance with a radiation-grid:

A radiation-grid of Ch-Ni-steel is installed in front of the surface of the ceramic slab. It is heated by the waste heat and the radiation heat of the ceramic slab. The absorbed heat is reflected directly from the grid back



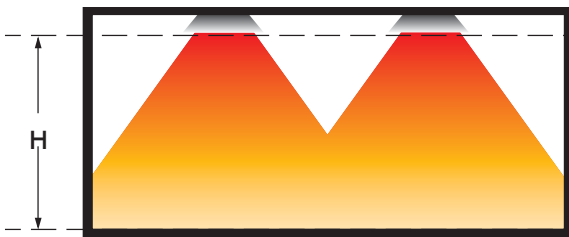
Gas-Infrared-Heaters

The even distribution of radiation in the hall is important. An uneven distribution leads to zones with lower temperatures, like "shadows" in the light-technology. This can make sense in some cases (zones of stores), but should be avoided for even heating.

The Schwank-employees like to support you with the exact planning. Approximately, you can calculate as follows:



**Gas-Infrared-Heater
horizontal installation**



**Gas-Infrared-Heater
angled installation**

