


# catalytic infrared heating technology

FIT INFRARED

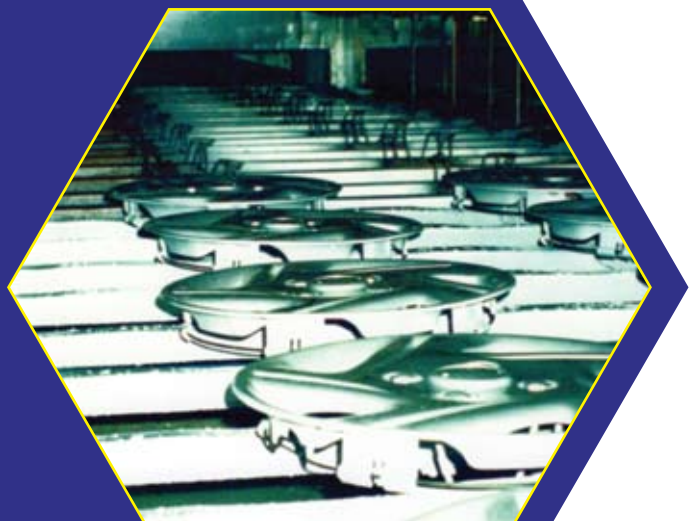
# typical applications of catalytic infrared curing

**FIT-Infrared (Eu) Ltd is a UK company based in the North East of England. We have been manufacturing catalytic infrared oven systems and industrial spray booths for 30 years. Over this time FIT have become highly skilled and experienced specialists in the use of catalytic infrared curing and heating systems.**

FIT catalytic infrared heaters are designed specifically for surface thermal treatments. FIT catalytic heaters are CE (Europe), ATEX (Europe), FM (USA), CSA (Canada), GOST (Russia) and UKR-SEPRO (Ukraine) certified.

## TYPICAL APPLICATIONS

- Solvent and water-based paint curing and drying
- Powder coating gelling and curing
- Dry off and pre-treatment ovens
- Insulation lacquer curing on electrical cables
- Thermal forming of plastics and GRP
- Pre-heating of products for further treatments
- VOC abatement systems



# FIT Catalytic Infrared Systems are...

## fast, efficient, cost effective and environmentally friendly

**Are you looking for an efficient, cost effective and environmentally friendly and ultra safe drying system for your industrial spray shops and paint drying ovens?**

FIT-Infrared has extensive knowledge in this area and is ideally placed to show you how this breakthrough technology can be put to everyday use at a price that makes sense to any sized business.

FIT-Infrared is a UK based, cutting edge company that is a world-leader in the supply and installation of catalytic infrared heating technology.

### CATALYTIC TECHNOLOGY

Catalytic heaters are fuelled by natural, butane or propane gas and use catalytic infrared technology. Rather than using a flame, fuel is combusted by means of an exothermic reaction. The temperatures involved in catalytic heating are much lower than in flame combustion, therefore the heaters present no risk of igniting explosive vapours from solvent based coatings. This makes the system ideal for curing solvent based paints, glues, lacquers and powders.

### IDEAL FOR CURING PAINTS, GLUES AND LACQUERS

This revolutionary technology means that painted items, such as engines and automotive bodyparts, can be heated directly which provides far greater energy transfer efficiency. Most organic materials readily absorb the long-wave (far) infrared energy that is produced, giving a better finish in less time and at a lower cost.

**Savings on time, energy and production costs of up to 80% have been achieved when compared to traditional convection or short-wave (near) electric infrared oven systems.**

FIT-Infrared's faster processing times enable considerable savings to be made in the size of the processing plant, releasing valuable floor space which can then be utilised for other production activities.

# 英国菲特催化红外系统的主要优点为...

快速、高效、低使用成本、环保。

## 您正在为您的工业喷漆房及烘房寻找一种更加高效，更加环保并且极其安全的加热系统吗？

凭借在此领域中积累的大量经验及技术，英国菲特在此将最新技术介绍给您，帮助各型企业将这一先进技术运用在日常生产中。

作为以创新为根本的企业，来自英国的菲特红外是全球催化红外加热系统行业领导者。

### 燃气催化燃烧技术

燃气催化红外加热板采用天然气或丙烷为燃料，利用燃气与氧气混合发生的放热反应产生热能，放热过程中无明火。燃气催化反应温度远低于明火燃烧温度，因此不会引燃溶剂型产品中挥发出的易爆成分。 这一特性使得红外催化加热技术成为了最适用于溶剂型油漆烘干的加热方式。

### 针对油漆，粘合剂及腊克漆最理想的烘干方式

作为具有革命性的加热技术，燃气红外加热板可将红外能直接投射至引擎，汽车零部件等工件表面喷涂层，这样的热能传导方式大幅提高加热效率。 绝大多数有机材质可以高效吸收燃气催化红外加热板生成的长波红外能，可在更短时间内达到更佳的处理效果，大幅降低费用。

### 与传统的热对流及电红外（短波）加热方式相比，采用燃气催化红外系统可以带来达到80%的处理时间，能耗及处理费用节省。

由于菲特催化红外加热系统可为客户大幅减少处理时间，因此也比传统加热处理方式更节省宝贵的厂房空间。


# 燃气红外技术的典型用途

菲特红外（欧洲）公司位于英国东北部。我公司多年来致力于红外催化技术及产品研发、红外催化烘房及工业喷漆房设计制造。并在此过程中积累了大量相关经验及技术。

菲特红外催化加热板专为表面加热处理而设计。并取得了CE（欧洲）， ATEX（欧洲），FM （美国）， CSA （加拿大），GOST（俄罗斯） 以及 UKR-SEPRO （乌克兰）相关认证。

典型用途包括：

- 水性及溶剂型油漆烘干；
- 塑粉熔融及固化；
- 除水及预处理烘房；
- 电线及电缆绝缘漆烘干；
- 塑料及玻璃钢材料热成型；
- 产品预热处理；
- 挥发性有机物（VOC）处理系统。

# existing users of catalytic infrared technology

Gas catalytic infrared technology provides a versatile source of process heat for many applications throughout a range of industries. Curing on different substrates, such as wood, metal, plastic, thermoforming, leather tanning, shrink wrapping and water evaporation are among the most common uses for this technology which provides finishing companies with a wide range of enivironmental and economic benefits.

# 英国菲特催化红外技术现有用户

燃气催化红外技术作为通用热源适用于各种工业业务领域，其中以木材、金属、塑料等各种基材表面喷涂烘干固化，皮革鞣制、除水烘干等应用最为广泛。燃气催化红外技术可为用户带来经济及环境等多重利益。

## SO HOW DO THEY WORK?

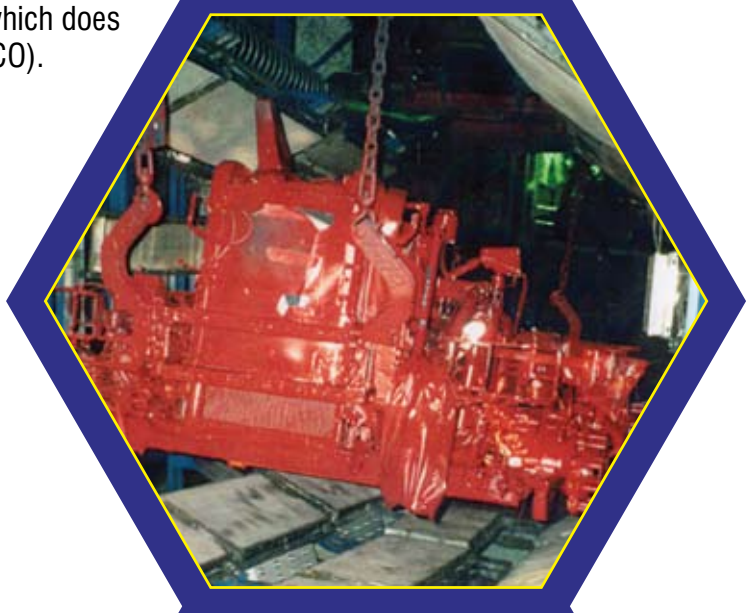
Prior to the gas fuel being allowed to enter the heater, a low wattage pre-heat electric element raises the core temperature of the catalytic medium to 120°c.

Fuel then enters the gas tight stainless steel pan and is evenly dispersed. The fuel then passes through a ceramic heat shield which prevents heat reaching the back surface of the pan. The ceramic pad also assists with the even distribution of the fuel over the surface of the catalyst.

The gas then passes through the catalytic medium which initiates an 'exothermic reaction' upon contact with the oxygen present in the air. This results in the combustion of the gas/air mixture at a temperature of between 250°c and 500°c which is below flame temperature.

## NO ENVIRONMENTAL POLLUTION

Catalytic reaction is a virtually perfect combustion process, which does not produce any nitrogen oxides (NOx) or carbon monoxide (CO).




## 工作原理及过程

在燃气进入加热板前，内置的低功率预热件首先将加热板核心温度提升至120℃以上。

预热温度达到后，燃气进入加热板并在发散盘内均匀发散后通过陶瓷隔热层。 陶瓷隔热层不仅可以防止加热板产生的热能传导至加热板背部，也可进一步保证燃气在接触到催化层前的达到均匀分布效果。

燃气经过陶瓷隔热层后即与催化层接触，燃气在催化层中与空气中的氧气接触发生放热反应。在此反应过程中加热板表面温度可达250℃-500℃，低于火焰温度。

## 无环境污染

作为近乎完美的燃烧方式，燃气催化反应不产生氮氧化合物及一氧化碳。

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