

新 資 訊

BRUCKNER 定型機 POWER FRAME 瓦斯間加熱

version 3 20190124

能源回收+進化增強空氣淨化裝置(選配) 全面解決方案机型

改變傳統現有定型機思維

A) 瓦斯間接加熱 / 不用熱媒 boiler , 不用配管, 通用於各種布種尤其是 nylon 85 % 以上不會黃化現象, 效率可達 84 % 左右/ 上下., 若有熱回收., 效率更高可達約 90 % ,

舉例:

Fabric data: 80 Nylon / 20 Elastan, 200 gsm, initial moisture 80%, dyeing temperature 160°C, setting temperature 185°C, setting time 30 seconds, estimated speed 22 m/min. (First half of the machine for drying and second half of the machine for setting)

Based on above assumptions would need 138 Nm³/h natural gas or in other words 1039 kW/h. The gas pressure required at the burner is 28 mbar.

B) 瓦斯是乾淨能源, 排污符合環境防治條款, 只需作降溫及靜電除塵裝置, 且不用配熱媒油管/ boiler 及 壓力 vessel 容器 檢驗, 節省人力及物力. 且按裝時間.

C) 制程升溫曲線/ 左中右保證 +/- 1 % 及機台各組燃燒機各別煙囪獨立, 可作完全熱回收.

舉例:

The recovery rate for above process will be 150 kW/h. Considering that we need 1039 kW/h energy, the recovery will be 14,5%.

D) 不鏽鋼盤管結構., 且已作完整熱脹冷縮鋼體/鋼材測試, 進而組裝爐壁壁燃燒爐頭 burner . 不變形及彎曲保證及完整高溫密封.

舉例: 圖片



以上提供 bruckner 已推展 3-4 年 new 定型機/ new innovation 瓦斯間接加熱 ., 市場已有 25 台以上(尤其在歐洲如 Italy 及德國.....

對手比較:

This is the indirect gas heating system of Monforts / Monfongs

(FIGURE :DRAWING / PHOTO)

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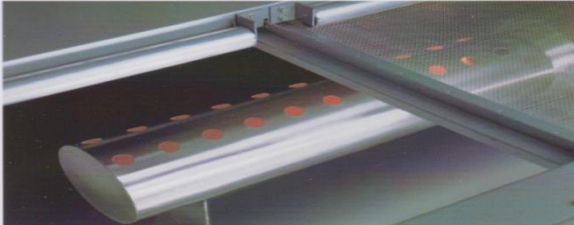
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> **Heating Options**
Energy input as required
Adaptable to the boundary conditions of the particular application and different operating process for optimum energy utilisation.

- Direct gas heating
- Indirect gas heating
- Circulating oil heating
- Steam heating
- Combined electric/steam heating
- Hot water heating
- Electric heating

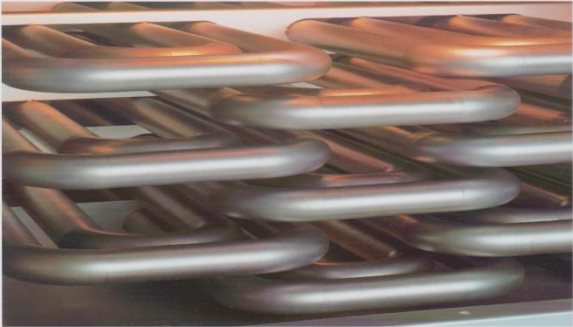
> **加热方法**
按需要选用能源
以当地条件及工艺特点采用最合算的加热方法

- 直接气体燃烧
- 间接气体燃烧
- 循环载热油
- 蒸气
- 蒸气与电力
- 热水
- 电力



> **Direct gas heating**
Uniform heat distribution over the whole chamber length.

> **直接气体燃烧**
热能均匀分配整个烘箱长度



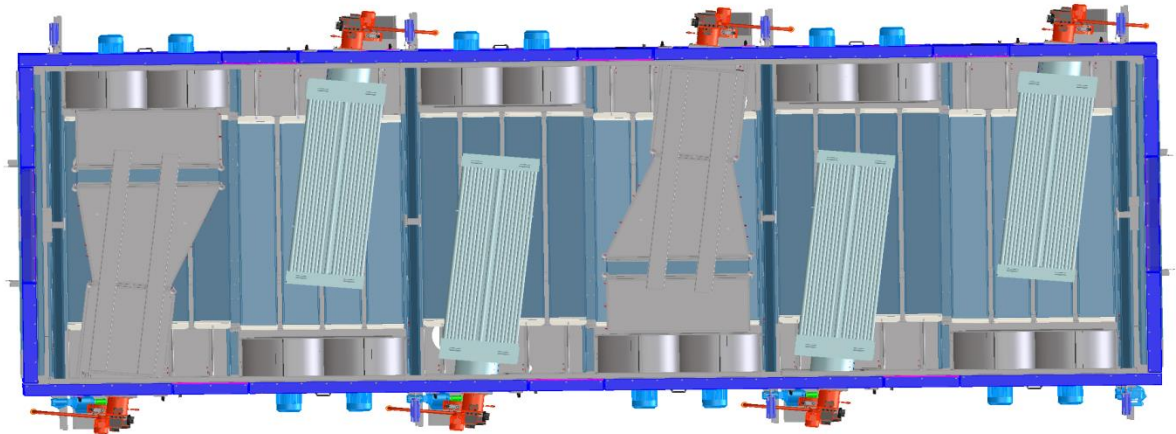
> **Exxotherm indirect gas heating**
High-efficiency indirect gas heating system practically eliminates yellowing during the treatment of polyamide and elastane-based fabrics, as the combustion gases do not come into contact with the fabric.

> **Exxotherm 间接气体燃烧**
高效间接气体燃烧系统可排除织物变黄，燃烧产生的气体不会接触织物，适合处理粘胶及含氨纶织物。

13

瓦斯間接加熱有下列優勢!

- 1) 如同熱煤油間接加熱系統，較適合較敏感布種 nylon +spandex , PET/Spandex ... 及黃化
- 2) 減少配管及長距離 pump 送油/入油及管內熱煤油傳輸 油氣污染及沒有熱傳導油壽命, 劣化, 油渣.. 問題發生
- 3) 乾淨能源., 升/降溫較快速.
- 4) 煙通/ 加工熱氣 各自獨立系統., 可作煙通道熱回收系統., 效率可達由 84,85----提升到 90-% 依加工流程溫度而定..
- 5) 操作方便--燃燒機/ 德制, 安全性極.



上圖示 瓦斯間加熱示意圖

Indirect Gasheating

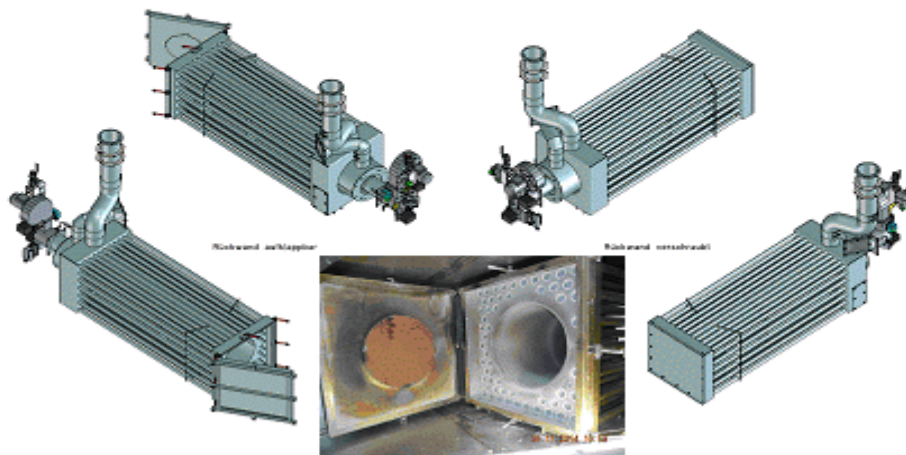
Indirect gas heat exchanger with lip to be screwed for cleaning of the heating tubes

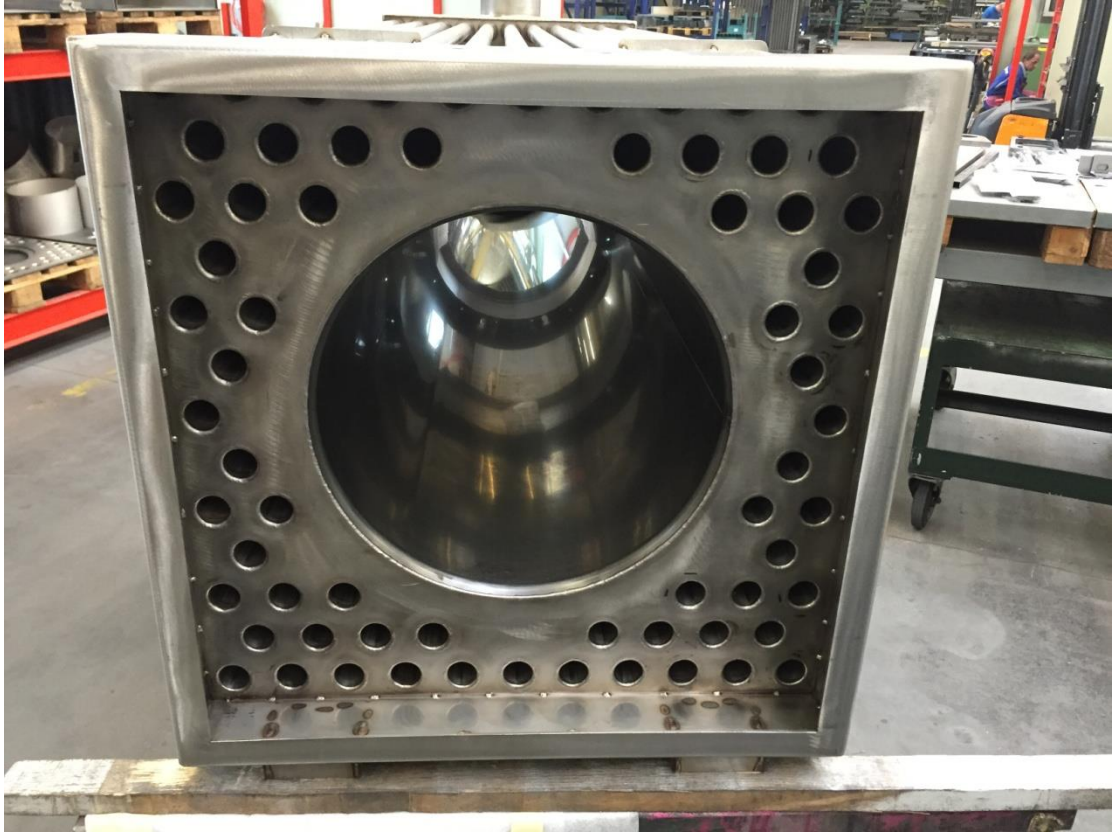
Indirekte Gasheizung
Gebülsesbrenner mit Rauchgaswärmeaustauscher



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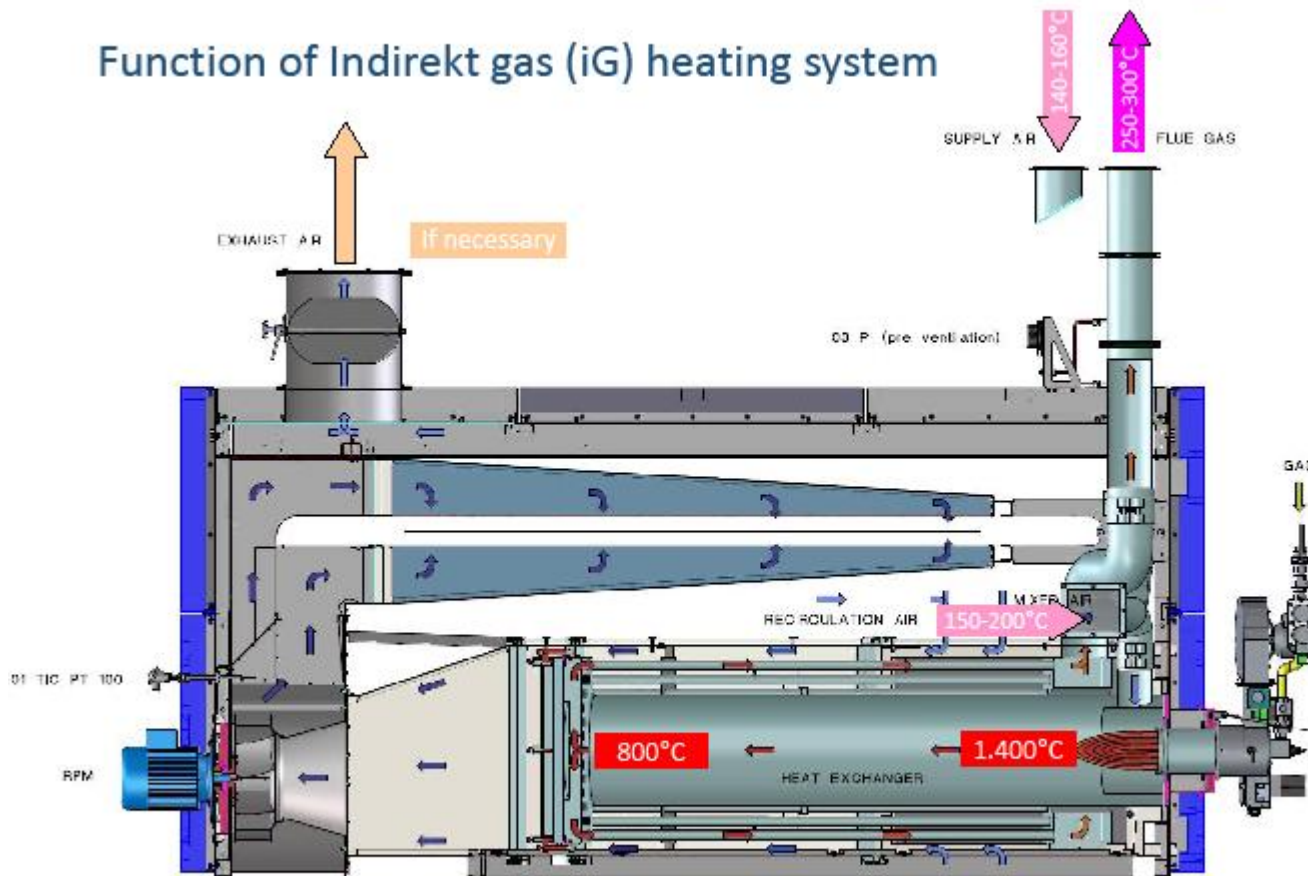
270324 1/1000 - Gebülsesbrenner 1/10



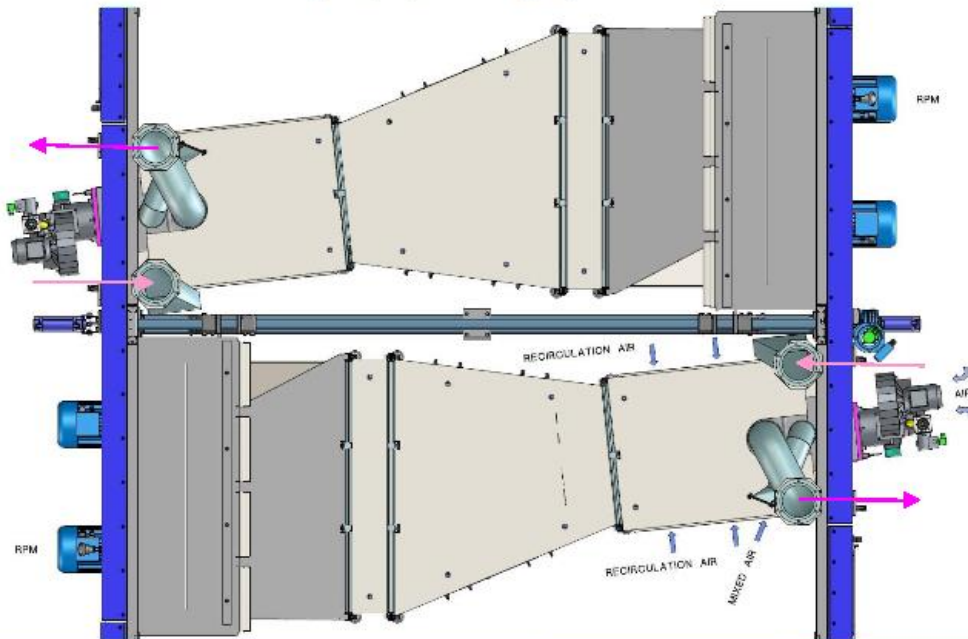


熱交器 air/ air 鋼體盤管結構設計

Function of Indirekt gas (iG) heating system



Function of Indirekt gas (iG) heating system - Top View



FASCINATING TEXTILE MACHINERY

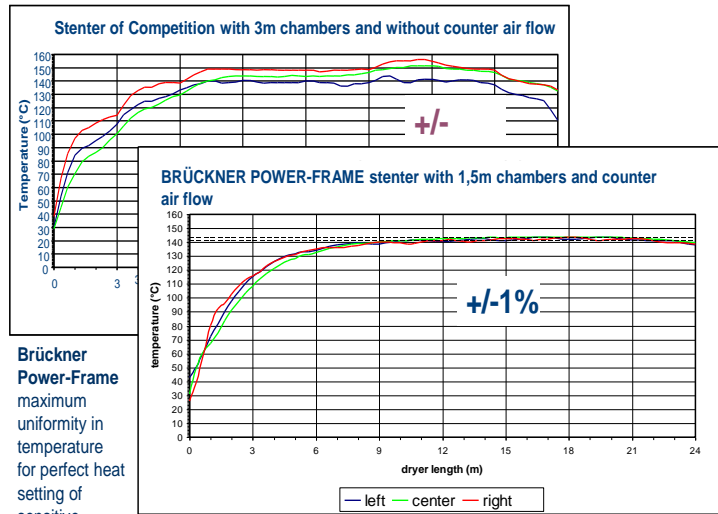
Heating systems – overview

Type of Heating	Efficiency	Pros	Cons
Gas Direct	95 %	<ul style="list-style-type: none"> most energy efficient heating system ! very short heating-up and cooling down cycles low maintenance effort very high temperature uniformity (2 regulated burners per 3m chamber) very responsive temperature regulation with large control span of 1:40. Lowest temperature = 100°C. 	<ul style="list-style-type: none"> gas not available everywhere chemical reaction of elastane fabrics with hot gas fumes and thus fading of fabric
Gas indirect with heat-recovery	80-85 % 90 %	<ul style="list-style-type: none"> indirect heating system and thus no mixing of circulating air from inside the dryer with burner fumes and thus <u>no fading of fabrics with high elastane content</u> faster heating up cycles / more responsive temperature regulation compared with other indirect heating systems lower investment cost compared with other indirect heating systems (no boiler required) 	<ul style="list-style-type: none"> increased energy cost of 10 – 18 % compared to direct gas heating 15% reduction in evaporation capacity due to pressure losses from heat exchanger higher maintenance effort for cleaning of heat exchangers limited accessibility of stenter for maintenance
Steam indirect	< 80 %	same advantages as indirect gas heating plus: <ul style="list-style-type: none"> lower investment cost for stenter, no dependency on gas delivery / availability 	<ul style="list-style-type: none"> long (45') heating-up and cooling down cycles and thus less flexibility in production higher energy cost of 20% compared to direct gas heating higher maintenance for cleaning of heat exchangers
Thermo oil indirect	< 85 %		<ul style="list-style-type: none"> high investment cost for boiler and piping

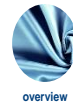


FASCINATING TEXTILE MACHINERY

Design of the thermo chambers



Brückner Power-Frame
 maximum uniformity in temperature for perfect heat setting of sensitive fabrics



The new Brückner HMI - MULTICONTROL



start screen: all machine components accessible by your fingertip



temperature and ventilation control



general machine overview



machine outlet / winder section



ECO-HEAT air / air



- 1) 大面積串列式鰭翅片熱交換模組., 熱交換效率高
- 2) 維修方便, 搬運拆裝容易(輕巧設計) 熱交換模組.
- 3) 額外清潔除裝置(超音波洗淨裝置)
- 4) 標配自動蒸氣清潔裝置
- 5) 風壓損檢測及能源回收檢視效果於 PC

ECO-HEAT air / water



- 6) 大面積串列式鰭翅片熱交換模組., 熱交換效率高
- 7) 維修方便, 搬運拆裝容易(輕巧設計) 熱交換模組.
- 8) 額外清潔除裝置(超音波洗淨裝置)
- 9) 標配自動蒸氣清潔裝置
- 10) 風壓損檢測及能源回收檢視效果於 PC

ECO-AIR Scrubber



- 1) 氣霧化裝置, 高效率移離油煙.
- 2) 自主式洗滌區段
- 3) 緊簡式尺寸, 有三段噴嘴用於不同汽流.
- 4) 操作低成品, 回收循環水裝置.
- 5) 內裝式設計(含噴嘴, 油/水滴分離器) 容易操作移裝.

ECO-AIR Electro Filter



- 1) 二段式電子靜電消除器，每一模組含電離和集電區
- 2) 煙氣移出效率高達 99%
- 3) 維修方便, 模組拆裝便利
- 4) 用於工業級開發應用上
- 5) 電氣控制--具有自動控制電壓調變