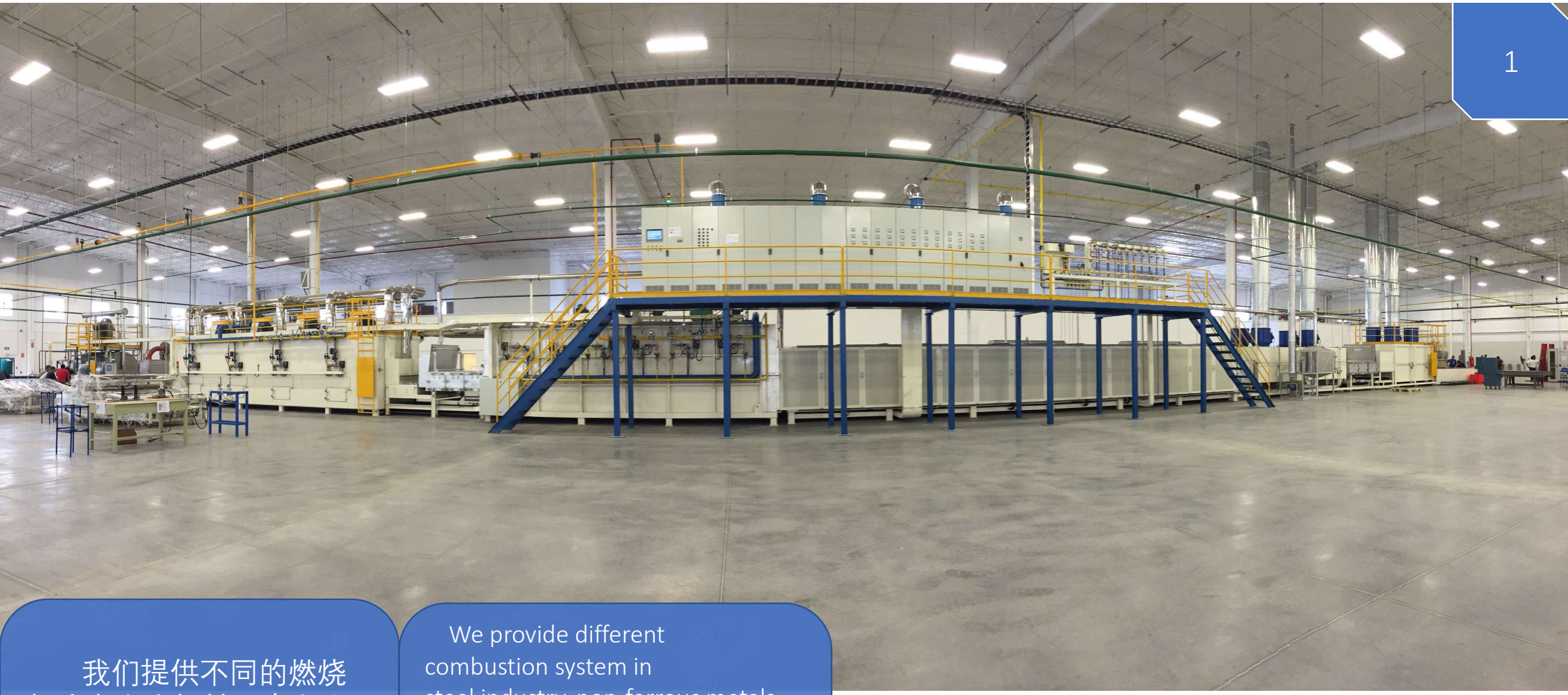
燃烧系统解决方案

Thermal Solution

上海炬联/Shanghai JLA



我们提供不同的燃烧解决方案在钢铁、有色金属、复合材料、陶瓷、热处理、环保等工业领域，为用户创造价值。

We provide different combustion system in steel industry, non-ferrous metals industry, composite material industry, ceramics, heat treatment, environmental protection and create value for customer.

上海炬联/Shanghai JLA

我们变得更加有竞争力!

我们生产不同种类的燃气烧嘴，结合世界上知名燃烧控制产品的著名制造商。使燃烧系统在确保安全、高效、可靠的情况下更加经济实用。在不同的工艺温度、加热方式、控制方式和燃料种类的情况下，有着丰富的经验和知识。

We become more competitiveness !

We produce various gas burners, and we make the combustion system safe, efficient, reliable and more economical and practical thanks to cooperate with the famous combustion control components products manufacturer. We have rich experience and knowledge in different heating field, as different process temperature, heating method, control method, different gas fuel.

MPB烧嘴用于步进梁加热炉
MPB burners for Walking beam furnace

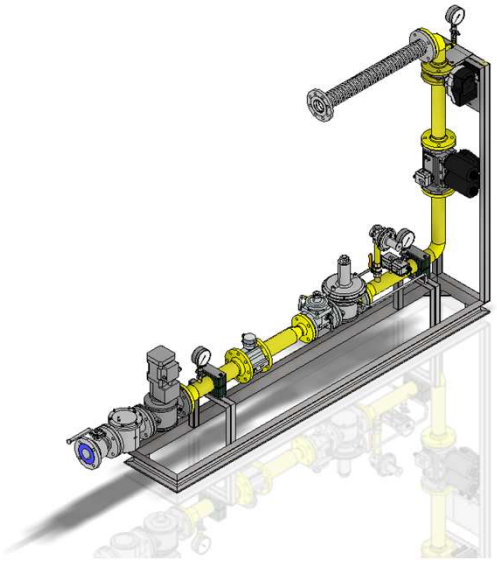
SRB烧嘴用于网带炉
SRB burners for Mesh belt furnace

我们的烧嘴产品以下几类：
1，MPB系列多用途烧嘴；可用于直接加 热和间接加热的场合（U，W辐射管）
2，OPB系列一体型燃烧器；主要用于低温热风炉，干燥炉等
3，SRB系列自身预热烧嘴；可用于直接加热和间接加热的场合（I，P辐射管）
4，DFB系列风道燃烧器；主要用于低温热风炉，干燥炉。按装在工艺风管中。
5，非标订制烧嘴，如低氮、富氧助燃、无焰燃烧等。

We produce various gas burners as below;
1, MPB series burner; for direct heating system or indirect heating system (U and W radiant tube).
2, OPB series package burner; for drying oven.
3, SRB series self-recuperative burner; for direct heating system or indirect heating system (I and P radiant tube).
4, DFB series duct burner; for drying system and installing in process air duct.
5, Customized burner, low Nox, oxygen-enriched burners, flameless .

OPB烧嘴用于隧道烘干炉
OPB burners for Tunnel drying oven

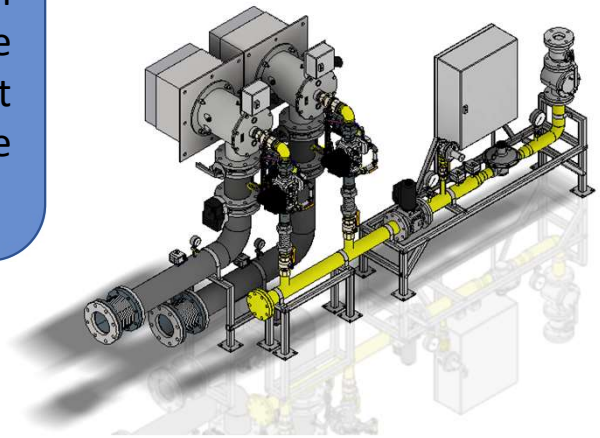
DFB烧嘴用于烘干炉
DFB burners for drying oven



我们根据欧洲的EN 746-2或者美国NFPA 86来进行设计和组装我们的燃烧系统。选用有CE、FM、UL、CSA、EAC等认证的产品，使燃气系统确保安全，达到世界各国的安全标准，满足全球的客户需求。

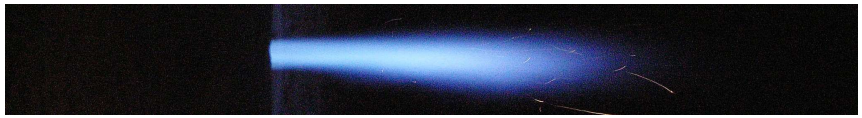
We design and assemble the combustion system according to EN 746-2 or NFPA 86. the components for the burner system meet CE,FM,UL,CSA,EAC certificate, guarantee the gas system safe.

DUNGS®
Combustion Controls



Honeywell

krom schroder



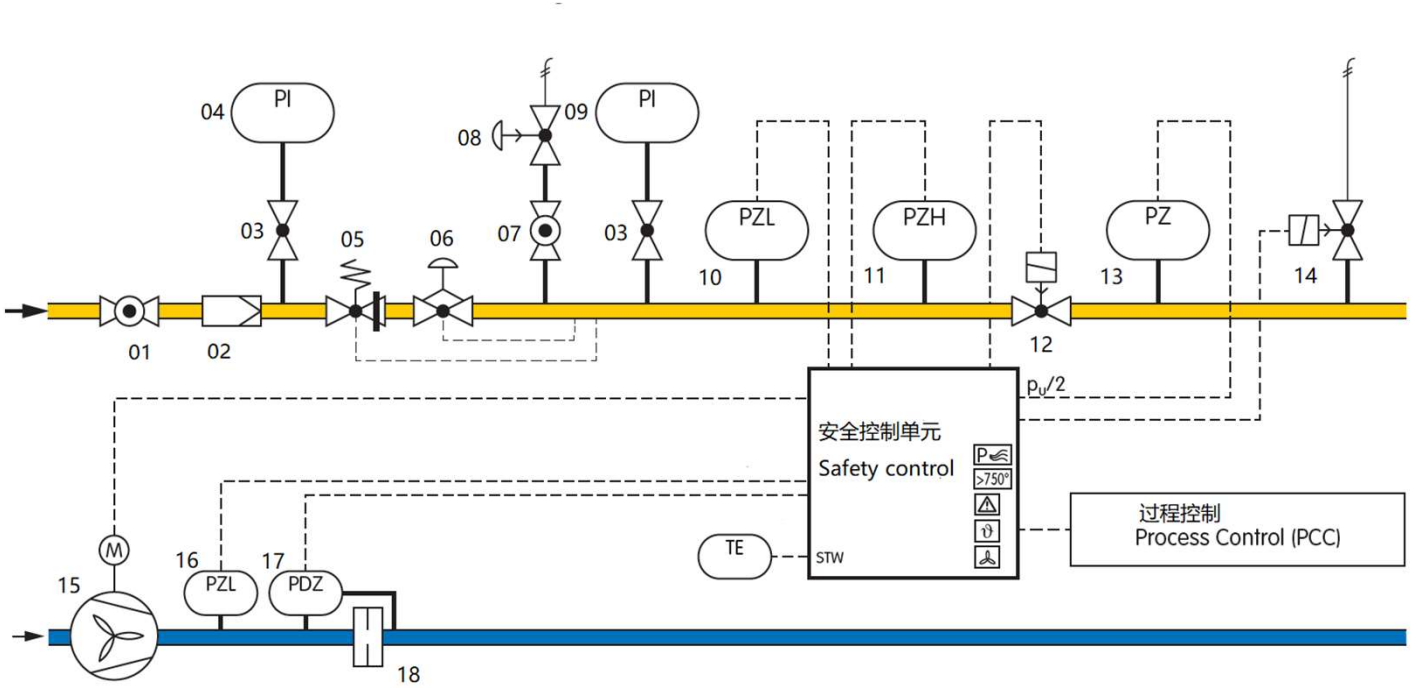
JLA

上海炬联/Shanghai JLA

燃气压力控制和安全控制方案
Gas pressure control and safety line solution

我们提供符合EN746-2标准的燃气压力控制和安全控制管路系统给下游工业加热的燃烧系统使用。
We provide complete solutions with preassembled gas safety, measurement and control systems to EN 746-2 for the gas distribution system on industrial thermal processing installations with downstream burner systems.

01，燃气球阀 Gas ball valve
02，燃气过滤器 Gas filter
03，按钮阀 Push button valve
04，高压压力表 Pressure gauge
05，安全切断阀 Safety shut-off valve
06，燃气减压阀 Gas regulator
07，燃气球阀 Gas ball valve
08，安全放散阀 Safety relief valve
09，低压压力表 Pressure gauge
10，压力开关 Pressure switch low
11，压力开关 Pressure switch high
12，主自动阀 Main auto valve
13，检漏用压力开关
Pressure switch for tightness control
14，检漏用自动阀
Auto valve for tightness control
15，助燃风机 Combustion air fan
16，压力开关 Pressure switch low
17，压差开关控制吹扫
Differential pressure switch for purge
18，空气孔板 Orifice for air



上海炬联/Shanghai JLA

连续控制，气动调节的冷空气助燃燃烧系统
Continuously controlled heating system with cold air and pneumatic ratio control system

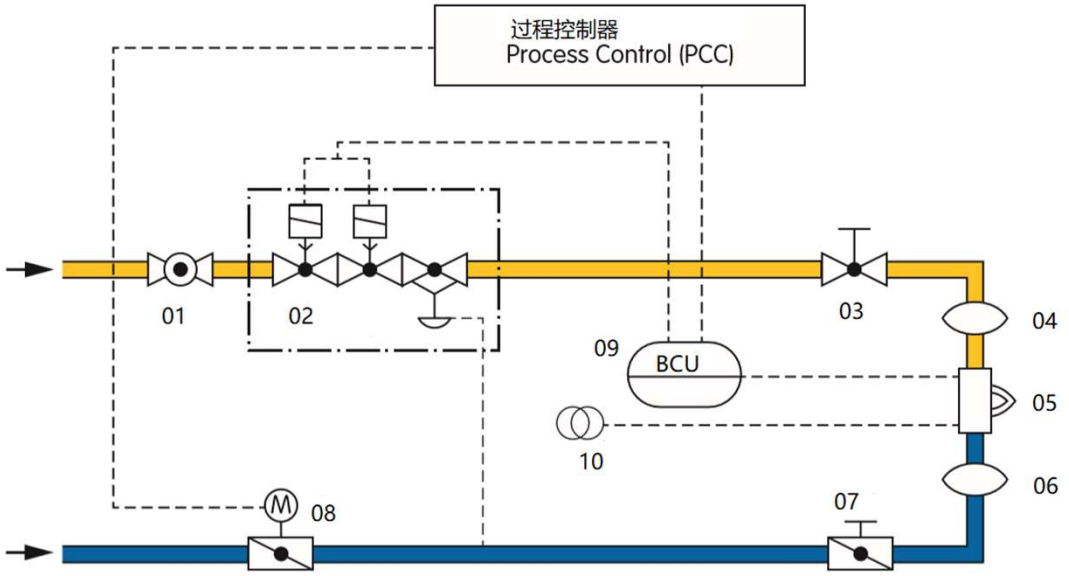
连续调节的燃烧系统是一种比较经济的方式。系统的负荷通过空气压力的变化（模拟量或者三点信号）控制气动比例阀燃气侧压力相应的变化，并保持恒定的空气燃气的比率。同时当空气不足时自动切断。手动调节的空气和燃气阀用于限制和调节流量。

炉膛内压力的波动会影响燃气和空气的输出，但是空气燃气的比率不会改变。燃烧控制器会进行点火和时时检测火焰保证烧嘴的正常运行。

Modulating control is a cost-effective option for controlling processes. The capacity can be adjusted continuously by activating the air control valve (analogue or 3-point step signal). The pneumatic ratio control system controls the gas pressure proportionally to the air pressure and thus maintains a constant gas/air ratio. At the same time, it acts as an air deficiency cut-out. Adjusting valves and/or butterfly valves are used for limiting the air and gas volumes and for adjusting the gas/air ratio.

Furnace pressure fluctuations have the same effect on the gas and air throughput so that the gas/air ratio will remain unchanged. Ignition and monitoring are ensured by an automatic burner control unit which is approved for continuous operation.

01，燃气球阀 Gas ball valve
02，燃气电磁阀和空燃比例阀
Solenoid valve with air/gas ratio for gas
03，燃气手动阀 Flow adjusting cock for gas
04，燃气波纹管 Bellow unit for gas
05，烧嘴 burner
06，空气波纹管 Bellow unit for air
07，空气手动阀 Flow adjusting valve for air
08，空气自动调节阀 Automatic valves for air
09，燃烧控制器 Burner control unit
10，点火变压器 Ignition transformer



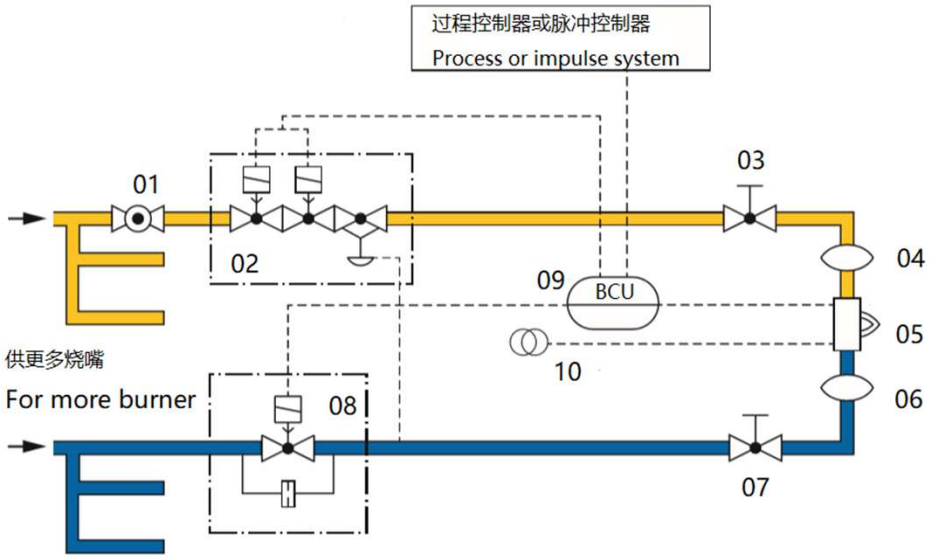
上海炬联/Shanghai JLA

阶段控制，气动调节的冷空气助燃燃烧系统
Stage-controlled heating system with cold air and pneumatic ratio control system

阶段调节的燃烧系统配合轮流脉冲控制在工况系统要求在宽大范围的情况下是一种最佳的方式。在周期控制下烧嘴进行开闭或者大小火运行。燃烧负荷通过过程控制器运算来控制烧嘴运行和关闭的时间。烧嘴在脉冲工作时在燃烧室中保持最大的动力和对流，即使在低负荷的情况下。这确保了炉内温度的均匀性。燃烧控制器控制烧嘴的点火和火焰检测，脉冲控制器控制一群烧嘴系统的吹扫、冷却、负荷调节。　　炉膛内压力的波动会影响燃气和空气的输出，但是空气燃气的比率不会改变。燃烧控制器会进行点火和时时检测火焰保证烧嘴的正常运行。

Staged control with rotary impulse control is an optimal solution for systems requiring a large control range. In the case of cyclical control, the burners are switched on and off or are controlled in High/Low mode. The capacity supplied to the process is controlled by means of a variable ratio of the operating time to the pause time. In this type of control, the burner output pulse frequency always maintains full momentum and maximum convection is obtained in the furnace chamber, even with low capacity supply. This ensures uniform temperatures in the furnace. Automatic burner control units with air valve control allow pre-purge as well as cooling via the burners which is controlled by the impulse system.

01，燃气球阀 Gas ball valve
02，燃气电磁阀和空燃比例阀
　　Solenoid valve with air/gas ratio for gas
03，燃气手动阀 Flow adjusting cock for gas
04，燃气波纹管 Bellow unit for gas
05，烧嘴 burner
06，空气波纹管 Bellow unit for air
07，空气手动阀 Flow adjusting valve for air
08，空气自动阀 Automatic valves for air
09，燃烧控制器 Burner control unit
10，点火变压器 Ignition transformer



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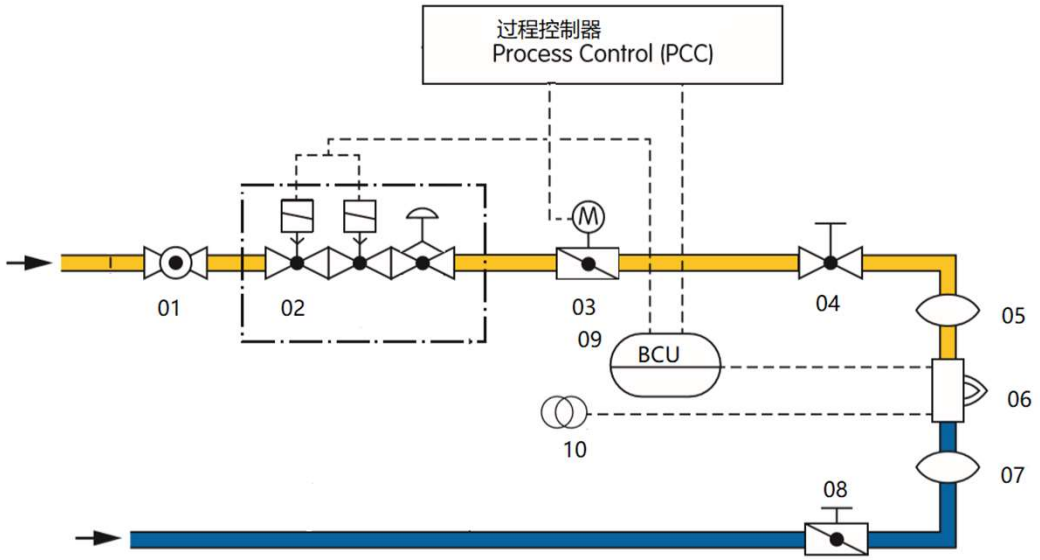
连续控制，定空气调节燃气的冷空气助燃燃烧系统
Continuously controlled heating system with constant cold air and gas adjusting control system

定风调燃气的连续调节的燃烧系统通常用于低温干燥的热系统中。系统的负荷通过调节燃气流量的变化（模拟量或者三点信号）而实行。助燃空气利用现场工艺风机或者单独的助燃风机提供，助燃空气为定量。手动调节的空气和燃气阀用于限制和调节流量。燃烧控制器会进行点火和时时检测火焰保证烧嘴的正常运行。当燃烧器的功率大于450KW是建议安装点火烧嘴。

Modulating control with constant air and variable gas is normally used in the dry oven and low temperature heating system. Process air fan or an independent combustion air fan supply a constant air to the burner for combustion. The capacity can be adjusted continuously by activating the gas control valve (analogue or 3-point step signal).. Ignition and monitoring are ensured by an automatic burner control unit which is approved for continuous operation. When the burner capacity is more than 450KW, we suggest to install a pilot burner for ignition.

01，燃气球阀 Gas ball valve
02，燃气电磁阀和稳压阀
Solenoid valve with regulator for ga
03，燃气自动调节阀 Automatic valves f
04，燃气手动阀 Flow adjusting cock for
05，燃气波纹管 Bellow unit for gas
06，烧嘴 burner
07，空气波纹管 Bellow unit for air
08，空气手动阀 Flow adjusting valve fo
09，燃烧控制器 Burner control unit
10，点火变压器 Ignition transformer



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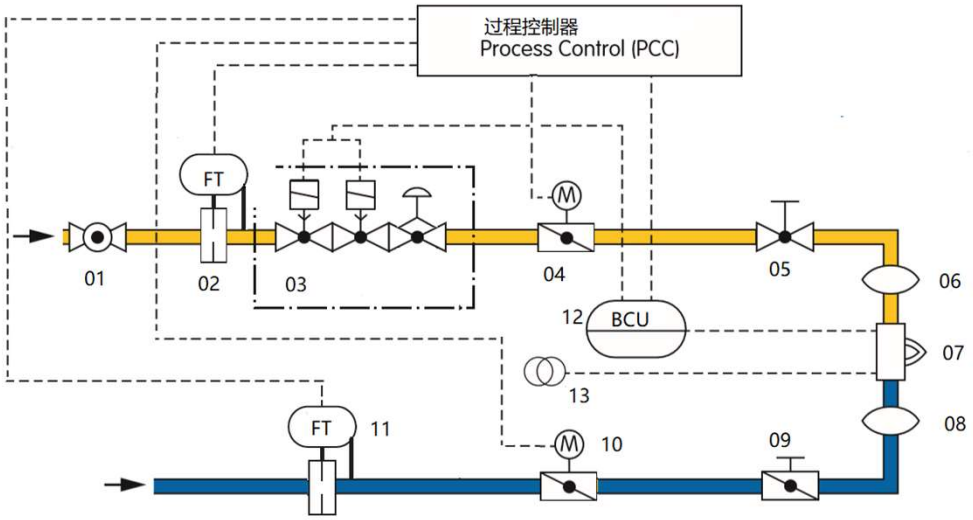
连续控制，空气燃气双交叉限幅控制燃烧系统
Continuously controlled， the Air/Gas flow double intersecting limiting modulation control system

连续控制，空气燃气双交叉限幅控制燃烧系统通常用于加热负荷比较大的热系统中，可用于单烧嘴或多烧嘴的控制。通过助燃空气流量和燃气的流量的配比在PLC中进行计算，保持一个相对稳定的空气过剩系数运行烧嘴，系统的负荷根据PLC运算后输出控制信号给空气和燃气的调节阀（模拟量或者三点信号）进行调节。调节精度高，同时也可加入燃气热值、助燃空气温度、烟气的氧含量等参数参与调节。燃烧控制器会进行点火和时时检测火焰保证烧嘴的正常运行。当燃烧器的功率大于450KW是建议安装点火烧嘴。

Continuously controlled， the Air/Gas flow double intersecting limiting modulation control system is normally used in large capacity furnace for single burner or multiple burners system. The PLC system will calculate the ratio with gas and air flow rate via gas and air flow meters ,burner operation under a stable coefficient of excess air. According to the requirement of the furnace load the PLC will output signal (analogue or 3-point step signal) to adjusting the automatic valve for gas and air. And parameter such as gas calorific value, combustion air temperature and oxygen value in the flue gas could be involved to control. Ignition and monitoring are ensured by an automatic burner control unit which is approved for continuous operation. When the burner capacity is more than 450KW, we suggest to install a pilot burner for ignition.

01，燃气球阀 Gas ball valve
02，燃气流量计 Gas flow meter
03，燃气电磁阀和稳压阀
Solenoid valve with regulator for gas
04，燃气自动调节阀 Automatic valves for gas
05，燃气手动阀 Flow adjusting cock for gas
06，燃气波纹管 Bellow unit for gas
07，烧嘴 burner
08，空气波纹管 Bellow unit for air
09，空气手动阀 Flow adjusting valve for air
10，空气自动调节阀 Automatic valves for air
11，空气流量计 Air flow meter
12，燃烧控制器 Burner control unit
13，点火变压器 Ignition transformer



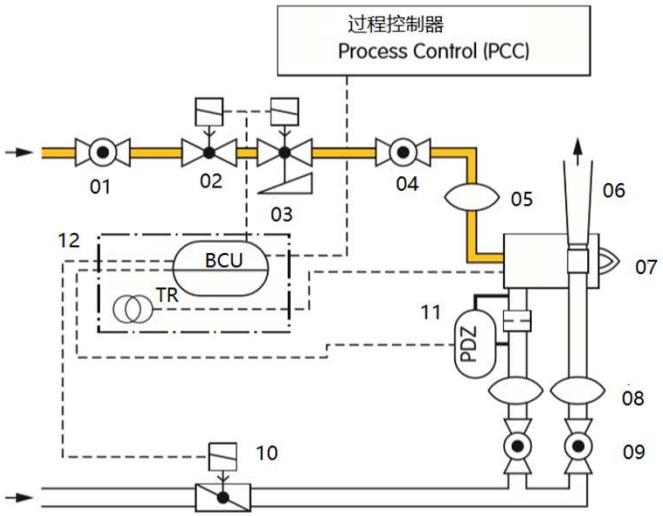
上海炬联/Shanghai JLA

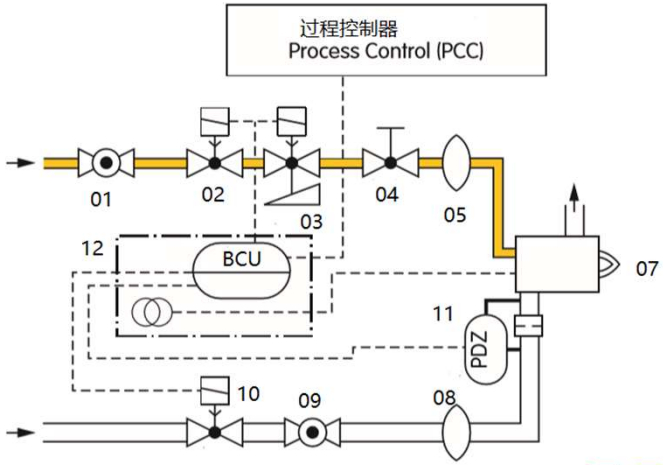
自身预热烧嘴在直接或间接加热燃烧系统
Direct or indirect heating system with self recuperative burner

自身预热烧嘴通过一个内置的同流换热器来预热助燃空气的温度，助燃空气和烟气在换热器中朝相对的方向流动。基于不同的型号的自身预热烧嘴和炉温，助燃空气预热的温度可达到450°C，可以节省大约20%的能耗。安装一个带中心喷孔的引射器生成一个负压通过烧嘴的换热器吸引出大概90%的炉膛烟气。余下的烟气通过炉子别的通道排除并可用于炉压的控制。自身预热烧嘴一般为on/off的工作方式在一个轮流脉冲控制的系统中运行。通常可用一个压差开关来检测助燃空气的流量。在特殊材料或在惰性气体的炉内不允许有燃烧烟气。在这种情况下自身预热烧嘴要配合I型或P型辐射管使用。

Self recuperative burners feature an integrated heat exchanger (recuperator) to preheat the combustion air. Flue gas and combustion air are fed through a heat exchanger in the opposite direction. Depending on the burner model and mode of operation, 20 % energy savings can be achieved with air preheating up to 450 °C in comparison to cold air burners. Self recuperative burners are used for direct heating in conjunction with an eductor for extracting the flue gases from the furnace chamber. The eductor generates a vacuum with a centrally positioned nozzle and thus draws approx. 90 % of the flue gases out of the furnace chamber along the outside of the burner's heat exchanger. The remaining quantity of flue gas air is discharged from the furnace via an additional flue gas opening and in this process is also used for furnace pressure control. Self recuperative burners are controlled by a rotary impulse system in staged ON/OFF control mode. Usually, the air flow can be monitored by a pressure switch. In processes in which the material must not come into contact with the combustion gases or in inert gas furnaces, the heating is performed indirectly with radiant tubes. For optimal energy use, self recuperative burners firing into a single-ended radiant tube or P radiant tube are often installed in this case.

01，燃气球阀 Gas ball valve
02，燃气电磁阀 Solenoid valve
03，燃气电磁阀 Solenoid valve （slow open）
04，燃气手动阀 Flow adjusting cock for gas
05，燃气波纹管 Bellow unit for gas
06，引射器 Eductor
07，自身预热烧嘴 Self recuperative burner
08，空气波纹管 Bellow unit for air
09，空气手动阀 Flow adjusting valve for air
10，空气自动调节阀 Automatic valves for air
11，空气压差开关 Air flow switch
12，燃烧控制器 Burner control unit

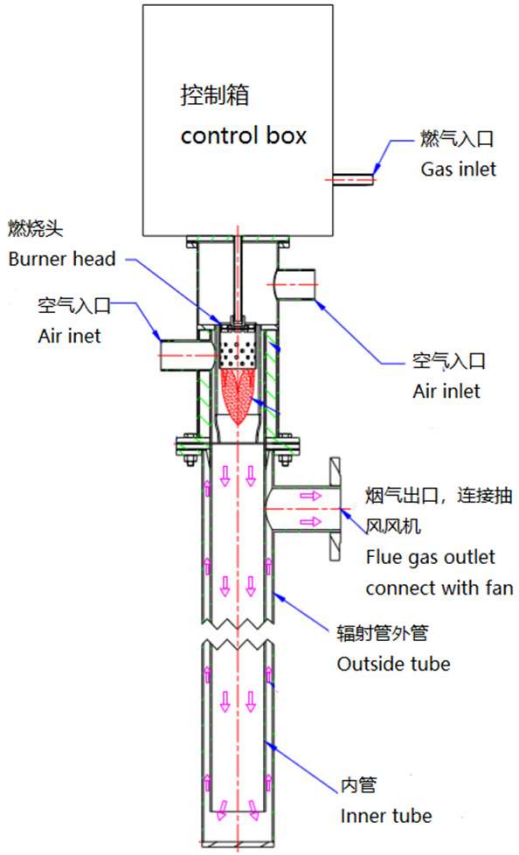


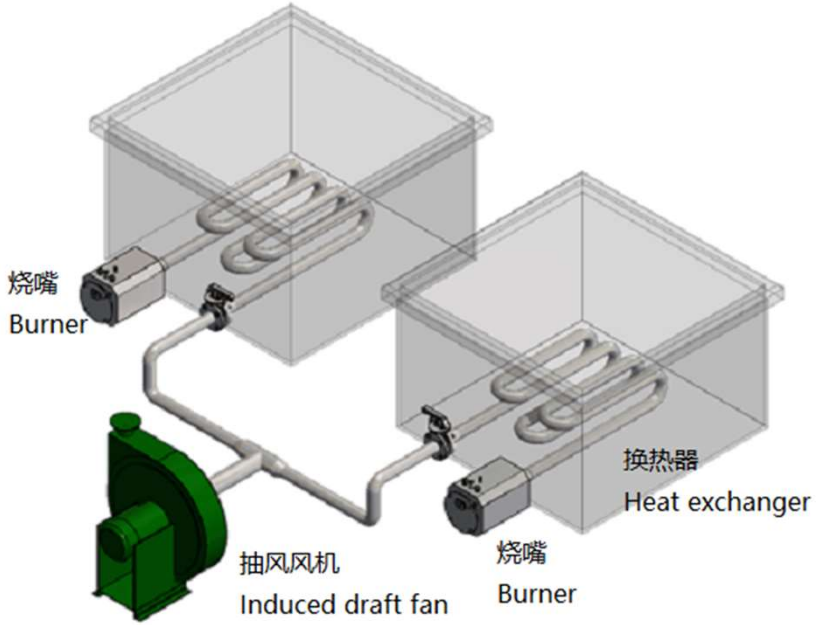


吸风式烧嘴间接加热燃烧系统
Indirect heating system with draw air burner

吸风式烧嘴通常安装W型或I型辐射管上用于加热液体或固体，此种烧嘴需要需要安装一个独立的助燃抽风机在辐射管的尾部进行助燃，可以单个烧嘴或多个烧嘴用一台风机。主要用于加热油槽，不超过100°C的水箱或者热修复被污染的土壤。

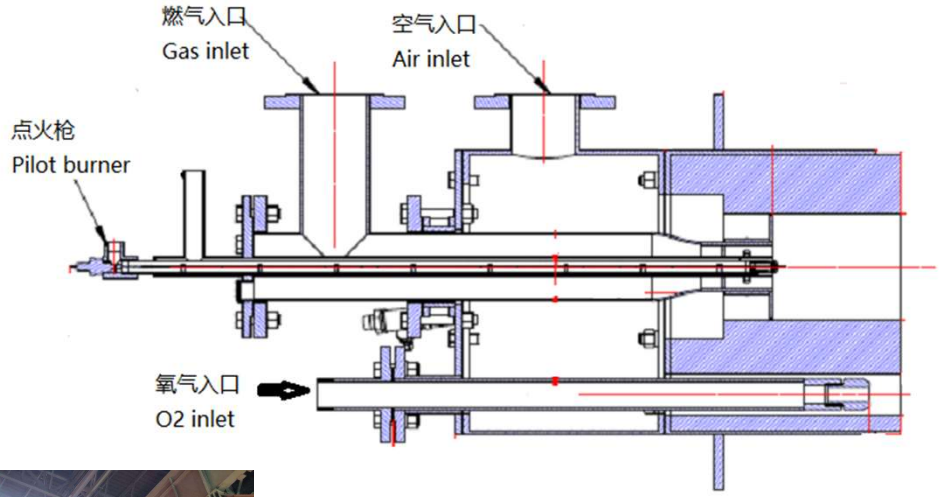
Draw air burners will be installed on W or I radiant tubes for heating liquid or solid. It need to install a independent induced draft fan to supply combustion air for single burner or multiple burners. This kind of burner is normally used in Oil and water tank, polluted soil thermal remediation.





富氧烧嘴
oxygen-enriched burners

我司开发的富氧烧嘴主要用于炉温较高，燃料热值比较低的工业场合。氧参与燃烧的量根据客户的技术要求来决定，由30%~50%不等，属于订制型产品。
The oxygen-enriched burners that we developed are good for the heating system that high temperature and low calorific value gas fuel. According to the technical requirements of the users, O2 is 30%~50%. It is custom-made.



上海炬联/Shanghai JLA

上海炬联热工装备有限公司
Shanghai JLA
www.jl-thermaltec.com
Mail: yorke.wang@foxmail.com