

## 推盘式炉热处理生产线

### Pusher Type Gas Carbonitriding Furnace Plants

#### 生产线概述及爱协林推盘炉特点

爱协林推盘式炉自动生产线以其独特的设计, 巧妙的构造, 稳定可靠的性能和显著的节能效果深受汽车, 齿轮, 轴承等大批量, 连续性生产行业用户的欢迎. 爱协林推盘炉有双推盘炉和单推盘炉生产线可供选择, 可实现渗碳淬火回火, 渗碳后缓冷, 碳氮共渗淬火回火等热处理工艺, 双推盘炉可实现不同层深产品的同炉渗碳, 尤其适合大批量, 连续, 自动化生产.

爱协林推盘炉生产线由装料机构, 预氧化炉, 加热炉, 渗碳炉, 扩散炉, 淬火槽, 清洗机, 回火炉, 卸料装置和控制系统等组成, 也可配置前清洗机.

爱协林推盘炉采用了获得专利的底装料结构和油自循环冷却风扇. 淬火油风冷装置, 油下工件转移装置, 全密封淬火油槽, 可在工艺中设定搅拌电机的转速.

#### 省电, 省气效果明显

底装料结构, 取消炉门帘, 炉门密封效果更好, 装料后炉气碳势波动小, 原料气消耗减少.

#### 良好的稳定性, 可靠性

精心选用世界著名品牌元器件, 先进的设计, 精心的制造, 确保设备运行的稳定性, 可靠性和耐久性.

#### 最小的辅助安装费用

使用爱协林专利技术—油自循环冷却风扇, 采用淬火油热管风冷装置, 不需要循环冷却水池, 水泵, 冷却塔, 水处理设备, 水管等辅助设施.

#### 先进的计算机管理系统

计算机系统对料盘进行可靠的跟踪, 随时查看各料盘中产品的名称, 数量, 位置, 装出炉时间等, 对设备运行状况进行监督, 工艺模拟和热处理数据计算, 是热处理工艺人员确定并优化工艺参数必不可少的工具.

#### 运行成本低, 安全可靠

先进的技术, 良好的稳定性和耐久性, 最少的辅助设施, 确保设备在电耗, 气耗, 维护费用和辅助设施消耗方面的成本最低. 完善的安全设施, 确保运行中操作人员, 设备和产品的安全.



#### Description of Plant

The parts loaded on charging racks in the non-hardening processing are handed over by a driverless transport system to the docking station at the plant; the parts' data and treatment parameters during docking will be transmitted at the same time.

The charges run through the gas heated preheating furnace and then are loaded from below via the inlet lock into the two-track pusher type furnace plant heated by gas radiant tubes. This mode of feeding technique. The advantage of is lower surface oxidation and reduced protective gas consumption. However, the design without intermediate doors allows to run exact temperature and carbon profiles.

The oil quenching bath in immersion-through-technique attached to the high temperature furnace consequently continues the philosophy of the inlet lock.

After the oil quenching bath' the racks are tilted to recycle the oil collected in scooping parts directly back into the bath. Best cleaning results are achieved by the subsequent FLEXICLEAN®-Cleaning plant.

Parts, requiring an alignment before tempering, can be removed directly after the washing machine.

The remaining charges run through the electrically heated two-track tempering furnace and will be transposed again after cooling on the cooling track to the transportation system for further transportation together with the parts' data. For running a continuous operation, the plant is provided with an automatic standby tray storage including manipulator.

The plant allows cycle times of 7 min (with case hardening depth 0.6 - 0.9 mm) resp. 9 min (with case hardening depth 0.85 - 1.1mm) for automobile gear components made of 16MnCr5.

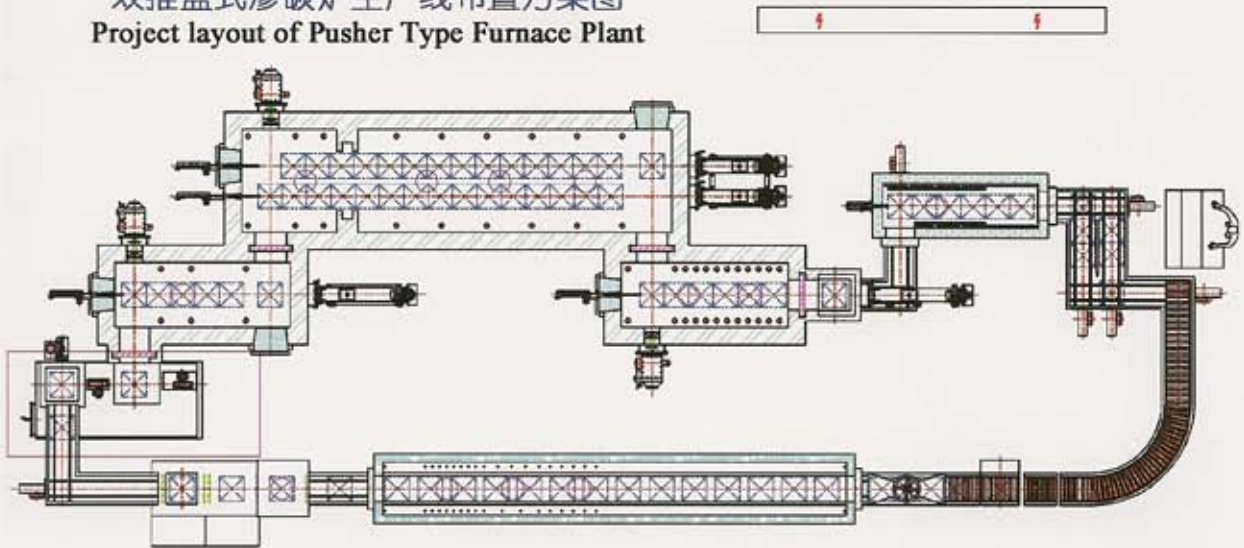
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### 主要技术参数表 Technical Data

型号 Type	料盘尺寸 L×W	装料高度 H	最大生产能力 Max. capacity	加热功率 heat power	装机容量 Ist.capacity	推料周期 push cycle	热处理工艺 Process
TKEs-56/56/70	560×560	650	300kg/h	478kw	585kVA	12~35min	渗碳淬火回火
STKEs-60/60/75	600×600	700	750kg/h	900kw	1030kVA	10~45min	渗碳淬火回火
TKEs-80/60/40	800×600	350	400kg/h	375kw	470kVA	12~25min	等温正火
TKEs-85/80/85	850×800	800	1600kg/h	380kw	450kVA	20~50min	保护气氛退火
TKEs-115/70/70	1150×700	650	1500kg/h	568kw	644kVA	15~50min	曲轴软氮化

其它特殊型号可根据客户方要求定制 Special Size on Request.

双推盘式渗碳炉生产线布置方案图  
Project layout of Pusher Type Furnace Plant



油自循环冷却风扇专利  
Patent: Oil self-cooling  
circulation Fan



底装料机构专利  
Bottom Inlet

控制画面示意图  
Control display diagram

