Infra-Red Heating System

For Injection Molding Machines

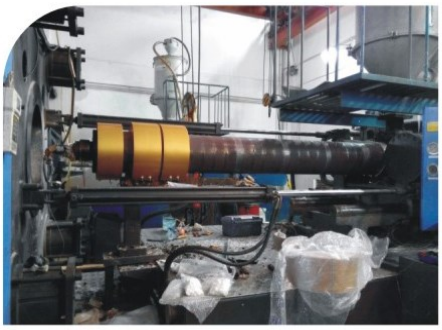
BillionGroup Technologies Ltd.

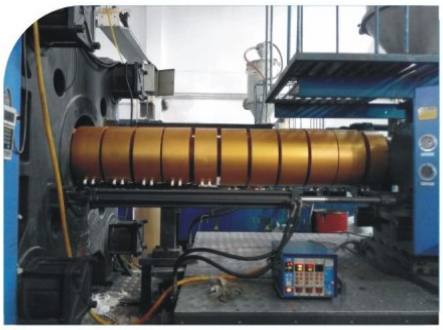
Unit G, 7th Floor, Century Centre, No. 33-35 Au Pui Wan Street, Fotan, Shatin, N.T., Hong Kong

Phone: (852) 2511-0838
Fax : (852) 2511-2698
Email : info@billiongroup.com
www.billiongroup.com

Injection molding machine working principle refers to injecting hot resin material into molding cartridge to form specific shape. The resin material are sent to the district heating cartridge from the barrel by a screw or plunger driven cylinder. It is heated to the desired temperature of the passage of the screw or the plunger under the action of the thermoplastic is injected into the melt pressure of the closed mold. The Injection molding mold is then fixed to the movable platen and stationary platen. Clamping system will then ensures the mold is fully closed, and to provide required pressure. The time, pressure, and flow rate of injection molding can adjust the molding cycle products.

Conventional injection molding machine barrel heating uses resistance heating, which caused greater heat loss and thermal inertia. The structure of the nano-infrared energy-saving electric coil is made of insulation material wrapped nano-infrared heating device component. According to some of the known technical findings, reasonable infrared heating technology, by providing specific heating requirements of each suitable choice of the radiating element, the heating efficiency than ordinary resistance heating saving more than 30%. And due to the structural design of the infrared heating device uses external insulation, heat loss of the heater and injection gun barrel of the original electrical resistance heating means to be much smaller, thus increasing insulation measures in heating efficiency while reducing heat loss will be greatly improve the efficiency of the injection molding machine heating system. Meanwhile nanometer infrared energy-saving electric infrared heating coil, substantially no thermal inertia, so temperature control is relatively more stable. So instead of using nano-infrared heating injection molding machine resistance heating means saving but also can improve the control precision injection molding machine.





Case Study:
In 178T injection molding machine, the original daily consumption is about 62.6KW, after the transformation of nano-electric heating, daily power consumption is reduced to 38.8KW, and by 26 working days per month, the monthly savings are listed below:

Q = (62.6-38.8) * 26 = 618.8KWH / month
Electricity (RMB1 per kWh calculated): 618.8 * 1 = RMB618.8 / month (about HKD $ 720 / month)
The payback period can be completed **within a year**.

注塑機

紅外加熱系統

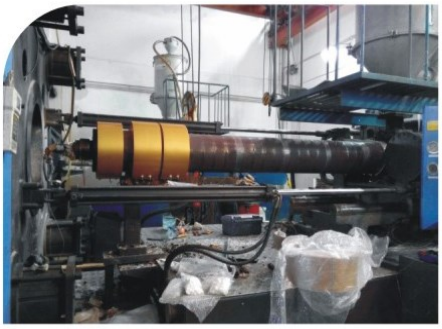
兆豐科技設備有限公司

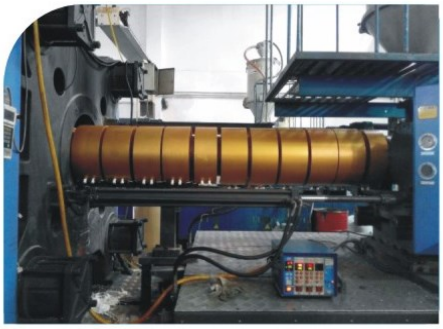
香港沙田火炭坳背灣街33-35號
世紀中心7樓G室

電話： (852) 2511-0838
傳真： (852) 2511-2698
電郵： info@billiongroup.com
www.billiongroup.com

注塑機工作原理是指將樹脂物料加入熱料筒的加料裝置中，形成特定的形狀。從料筒中通過柱塞或螺桿帶動的氣缸將物料送到料筒的加熱區。物料在加熱區軟化並被加熱到所需的溫度，柱塞或螺桿推移時熱塑性塑料在熔體壓力的作用下被注入閉合的模具內。注模模具被固定在動模板和定模板上。鎖模系統保證模具的閉合，並提供注射時所必需的鎖模壓力，注塑機上設有時間、壓力、流量、調節系統可以控制製品的成型週期。

以往注塑機的砲筒加熱使用電阻加熱，熱損失，熱慣性都比較大。而納米紅外節能電熱圈的結構是由保溫材料包裹的納米紅外電熱裝置組成。根據已知的一些技術研究結論，合理的紅外加熱技術，根據被加熱物的要求來選擇合適的輻射元件，其加熱效率要比普通電阻加熱方式節能30%以上。同時由於該加熱裝置使用了外部保溫的結構設計，加熱器的熱損失與註塑機砲桶原有的電阻加熱裝置要小的多，因此在加熱效率提高的同時增加保溫措施減少熱損失，將大大提高注塑機加熱系統的效率。同時納米紅外節能電熱圈採用紅外加熱，基本沒有熱慣性，因此溫度控制相對電阻加熱更穩定，注塑機生產更加穩定。因此使用納米使用紅外加熱代替注塑機的電阻加熱裝置節能的同時也能提高注塑機的控制精度。





案例:

以178T注塑機為例，原有每日用電量是62.6KW左右，使用納米節能電熱圈改造後，每日用電量降低到38.8KW，按照每月26日工作天計算，每月節約的電能如下:

Q=（62.6-38.8）*26=618.8KW/月

電費(以每度電1元計算)：618.8*1=RMB618.8/月(大約HKD$720/月)

而投資回本期能在**一年之間完成**。