

Leshan 乐善

乐善改变**吹瓶**世界

LESHAN change the blowing routine

Stock code:871695



S Series

先普全电吹瓶机系列

Full Electric EBM Machine

广东乐善智能装备股份有限公司

GUANG DONG LESHAN INTELLIGENT EQUIPMENT CORP.LTD.

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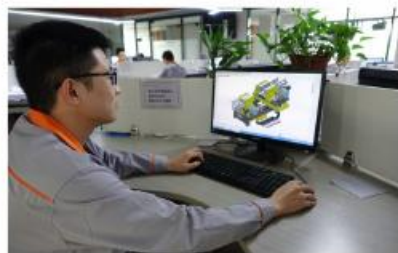


研发能力 R & D capabilities



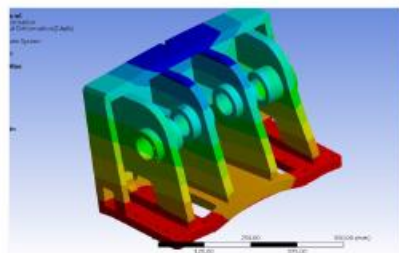
专业团队：乐善工程部有30多位机械/自动化/电器/液压/高分子专业工程师。

Professional team: Leshan Engineering Department has more than 30 mechanical / Automation / electric / hydraulic / polymerspecialty Engineer.



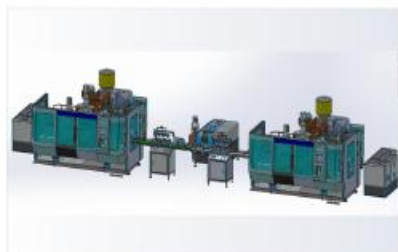
数字化设计：乐善公司使用Solidwork 软件进行所有的设计，有效提高设计效率和精准性。

Digital design: Solidwork software was used for all design, improve design efficiency and accuracy.



仿真测试：设计后，对安装尺寸、受力进行模拟运算和校验。

Simulation test: after design, the installation size and force are simulated and checked.



柔性生产线：把多台设备联结起来组成生产线，依靠计算机管理，整合多种生产模式，从而能够减少生产成本做到物尽其用。

Flexible production line: the combination of multiple equipment to form a production line, relying on computer management, integration of a variety of production modes, so that the production cost can be reduced to achieve the best use.



AutoCAD Mechanical：创建3D实体模型，清晰向用户展现订制品的外观。

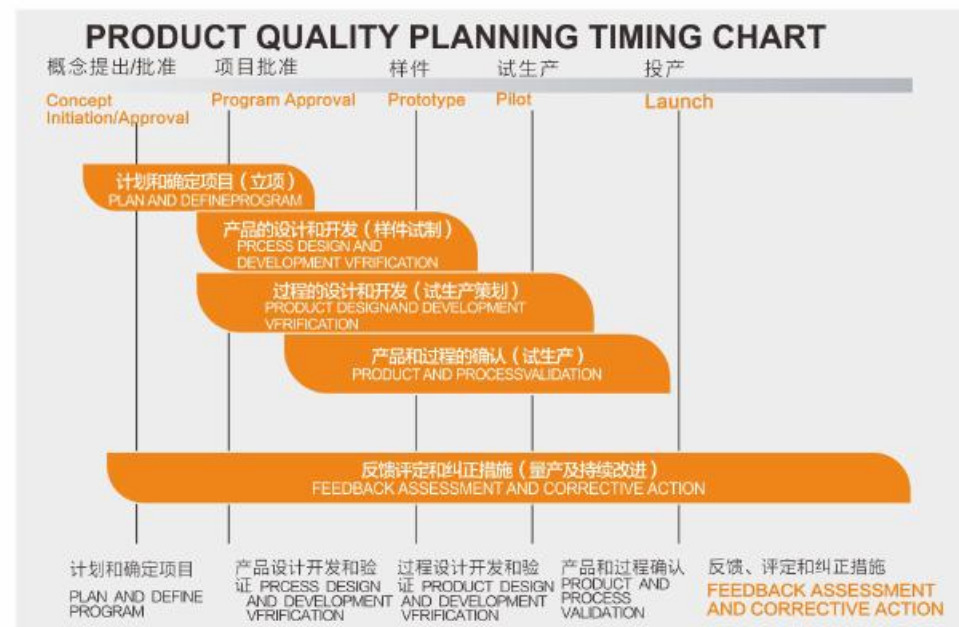
AutoCAD Mechanical: create 3D entity model, clearly show users the appearance of ordering products.



数字通信：实现双向控制和手机通讯，老板即使休假也能掌握工厂的生产实况。

Digital communication: two-way control and mobile phone communication, The boss can grasp the production status of the factory even if he takes a vacation.

全电机产品策略 Full Electric EBM machine product strategy





1 电动壁厚 Servo parison control

100点电动伺服壁厚控制系统，响应速度1ms，重复精度0.005mm；

伺服电机驱动、滚珠丝杆传递动力、模头结构采用拉杯式结构，精度更易控制，质量更有保证；

Brand new 100 point electric servo parison control system, Response speed 1ms, repeated accuracy 0.005mm.

Servo driven by electric and power transfer by ballscrew, Cup pulling die head for more easier to control the accuracy and guaranteed quality.



2 电动抬头 Electric head lifting

双转盘翻转式抬头设计，抬头多点控制转速，快速抬头，缓速平稳下降，动作更加平稳。

Multiple speed control for die head, fast lift up, and slowly decent, providing stable head lifting motion.



3 电动插笔 Servo blow pin

插笔采用双向导轨设计，使用精密研磨滚珠丝杆，提升了插笔的运行平稳性。

Double direction guide rail design for blow pin, with precise ball screw, increasing the riding stability of blow pin.



4 电动锁模 Servo mold clamping

专利首创电动锁模技术，小功率电机配大速比减速机，合模力大。

电机中间发力，前后锁模板受力均匀。

1秒快速开合模（250开模距离）

Self developed patented electric mode-locked technology, small power motor with large speed ratio reducer, clamping force is large.

The force of the front and rear clamping plates is uniform.

1 second mold open/mold close (250mm mold open stroke).

小驱动，大动力！

电动齿轮锁模，低能耗
现场总线技术，实现工厂数字通信



7 电动升降平台 Electric platform elevating

蜗轮蜗杆减速机嵌管导向技术，赋予更大的内部空间给成品输送带。

Electric driven lifting plate adopting worm gear reducer and guiding technology to achieve the stability, gives greater interior space to the finished conveyor belt.



6 伺服机械手 Servo Manipulator

三合一悬臂式机械手，整体安装，定位精准。

3 in 1 cantilever manipulator, integral assembly, accurate positioning.



5 电动摆架 Servo Carriage

后驱式锁模架设计，重心下移不晃动，运行更平稳。

Rear drive for mold clamping, the center of gravity moves downward without shaking, and runs more smoothly.

Small Motor, Big Power!

Gear Clamping, Low Consumption
Fieldbus Technology,
Realize Digital Communication





成本与效益 COST AND BENEFITS

单机对比 Machine Comparison			
项目 Project	液压机 Hydraulic Machine	全电机 Full Electric Machine	对比 Comparison
模腔数 Cavity	2x2	2x3	全电机每台机多2腔 full electric machine each mold increase 1 cavity
生产周期 (s) Cycle Time (s)	30	18	全电机提速40% full electric machine speed up 40%
每24小时产量 (pcs) Output/24h (pcs)	11500	28800	全电机产量提升150% full electric machine output increase by 150%
每小时实际能耗 (kWh) Actual Energy Consumption/h (Kwh)	35	48.6	/
平均每万瓶耗能 (kw/10000pcs) Average Energy Consumption (kw/10000pcs)	730	404	全电机每万瓶生产耗电节约45% produce every 10,000pcs bottles, full electric machine saving electricity 45%
工人 Worker	2人 2 person	1人 1person	全电机每瓶节约1个工人 full electric machine saving 1 labor

1.29L 洗洁精生产方案对比 Solution Comparison (1.29L Dishwashing Liquid Bottle)			
项目 Project	4台双头液压机 Double Heads Hydraulic Machine (4 Sets)	2台三头全电机 Triple Heads Full Electric Machine (2 Sets)	对比 Comparison
设备投资 (元) Equipment Investment (RMB)	50万*4 500 thousand x 4	120万*2 1.2 million x 2	全电机比液压机投资多40万元 the investment volume of full electric machine is higher than hydraulic machine 400 thousand
年产量 (300天) pcs Output/year (300days) pcs	1380万 13.8 million	1728万 17.28 million	全电机每年增加348万瓶, 年增收104万元 (0.3元/瓶) full electric machine output/ year increase 3.48million pcs profit increase 1.04million (¥0.3/bottle)
每小时实际能耗 (kWh) Actual Energy Consumption/h (Kwh)	35X4	48.6X2	全电机每小时节省42.8kW full electric machine saving energy 42.8kW/h
电费 (300天) kWh Electric Charge (300 days) kWh	100.8万 1.008 million	69.98万 699.8 thousand	全电机年节省30.82万度电, 年节省30.82万元 (1元/kwh) in a whole year, full electric machine saving 308.2kW, saving ¥302.8 thousand (¥1/kwh)
人工 (两班制, 每人4000元/月) Labor cost (two shift, ¥4,000/month/person)	16人/天 16 person/day	4人/天 4 person/day	全电机年节省人工57.6万元 in a whole year, saving labor cost 576 thousand
		全电机投资 额外获利 Additional profit for invest full electric machine	192.42万元/年 ¥1.9242 million/year



气动系统方面 Pneumatic system



优化气路布局

吹气气路与动作气路从主路分开。

optimizing the layout of the gas path

The Pneumatic system for blowing and motions are separated from the main road.

插笔增强吹排气功效

16主吹气管, 2*12排气管, 加快制品冷却, 缩短生产周期。

Blowing pin is enhance the effect of blowing and exhausting

The cooling device on machine will speed up the cooling time and shorten the production time.

机械手二次冷却定径

悬臂式机械手具备抓取制品、制品二次定径及冷却的功能。

manipulator includes functions of Post-cooling Sizing

Forward and backward revolving robot hand, with the feature of take out the bottle from mold, secondary sizing and post cooling.

超低温气体冷却系统

提供数字化控制的干燥低温气体。

Ultra low temperature gas cooling system

provides digital control dry low temperature gas.

水路系统方面 Water system



插笔和机械手均有水道冷却, 加快制品冷却速度。

仿形模具水道冷却, 散热布局更加均匀。

优化水管线路布局, 2寸主管一进一出, 分2路供左右摆架用水。

blow pin and manipulator have water cooling, accelerate the cooling rate of products.

profile mold water channel, and the layout of heat dissipation is more uniform.

Optimize the layout of water pipe line, 2 inch main pipe in and out, 2 roads for the left and right swing rack water.

机械运动方面 Mechanical motion



采用伺服电机控制, 响应速度快, 运动轨迹曲线平滑, 达到快速运行的目的。

Servo motor control, fast response and smooth trajectory, achieve fast operation.

节能降耗方面 Energy saving and consumption reduction



动作搭载伺服电机驱动以及专利锁模技术的应用, 使机器动作能耗比传统液压机低50%-60%。

另外, 应用的电动壁厚控制系统也比传统液压壁厚控制能耗低10%-15%。

With servo motor and new clamping technology, the full electric EBM machine save energy consumption 50%-60% comparing to traditional hydraulic machine. And the electric parison control system can also save energy consumption 10%-15% comparing to hydraulic parison control system.



互联网+ Internet+

1、智能制造——西门子ProfiNet总线技术。
1.intelligent manufacturing — SIEMENS ProfiNet bus technology.



总线技术 Bussing Technique

2、整机采用现场总线技术，对等式通信网络。
2.The whole machine adopts fieldbus technology and equalities communication network.



远程维护 Remote Maintenance

3、远程维护系统
能远程在线诊断机器运行故障问题、在线修改机器运行程序。
3.Remote maintenance system
It can diagnose the machine running fault online and modify the machine running program online.



视觉检测 Visual Inspection

4、视觉检测系统
筛选出制品尺寸、制品表面和瓶口尺寸均合格的制品。
4.Visual inspection system
The products that are qualified for size, surface and bottle size are selected.



壁厚控制 Parison Control System

5、可视化瓶样壁厚控制
100点壁厚控制系统，可屏幕监测料管变化。
5.Visualized bottle sample thickness control
The 100 point thickness control system can monitor the change of parison on screen.



红外感应 Infrared Induction

6、红外感应监测系统
多重保护机械手：上水口没打掉，机械手不往下取瓶；下水口没打掉，机械手不放下瓶到输送带
6.infrared sensing monitoring system
Multiple protection manipulator: if the up deflash is not cut, the manipulator does not go down to take the bottle, if the down deflash is not cut, the manipulator does not put the bottle to the conveyor belt.



安全防护

1.安全防护
各运动部件如合模、摆架摆动等均设有防护装置。

Safety Protection

1.safety protection
All the moving parts such as clamping, carriage are equipped with protective devices.



机械手

2、悬臂式机械手可平放，可解决原运输时因货柜高度不足需拆除机械手的问题，减少在客户现场组装机械手。

Robot Hand

2.Cantilevered robot hand save the space during transportation and save the assembling time after machine arrived your factory.



智能调节

3、数字化调节，减轻工人的维修难度。

Intelligent Adjust

3.Comfort height,easy to touch the adjusted screw on die head when stretching out the handwhen stretching out the hand.



电动升降

4、提供广阔的机身空间给制品输送带通过。

Electric Elevating Platform

4.provides wide body space for product conveyor belt.



机械

5、机架采用前后分体，模块化模式，可直接装货柜，轻松运输。

Machinery

5.Easy to loading,the machine rack can be separated from front and back during transportation.



电器

6、电柜箱采用三层折叠平推式门，减少空间浪费。

Electrical

6.Saving space,electricity distributing box install the horizontal sliding door.



机型基本信息 Basic Information »»

制品名称	Product Name	洗洁精瓶 Detergent Bottle
容量	Volume	1.29L
净重	Net weight	88g
成型周期	Cycle time	18S
日产量	Daily Output	28800pcs/day



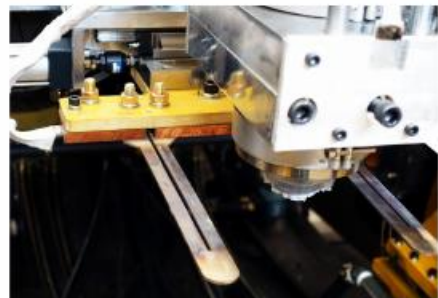
Model :S2-250+02-85+65-3		
模架数量	Carriage QTY	2
模头数量	DieheadQTY	3
螺杆直径	Screw Diameter	Inner layer Φ 85 outer layer Φ 65
螺杆挤出量	Extrusion Capa city	Φ 85:130kg/hr Φ 65:60kg/hr

最大开模距离	Max Mold Stroke	250mm
最小合模距离	Min Mold Stroke	500mm
锁模板尺寸	Clamping Plate Size	W 600mm* H 340mm
锁模力	Clamping Force	200KN
总功率	Total Power	114.7kW

选配功能 Optional Configuration

提升机器性能的选配功能

Optional Configuration for Performance Improvement



冷热共用切刀(导轨式/导柱式)

- 线性导轨结构，驱动轻盈灵活；
- 气缸驱动，横冷刀使用时，无需加温，耗能小；
- 冷刀、热刀互换只需更换刀片即可，方便快捷；

Cool/Hot Cutter(guide rail type/ guide pillar type)

- Linear guide rail structure, move fast;
- Cutter driven by cylinder, to save the energy, when using cool cutter, no need to warm up the cutter.
- Cool/hot cut only need to change the blade;



上下开合盖

适用于那种手柄、平底有内凹，且凹进较多的制品。

Open and Close Insert on Mold

Suitable for those kind of handle, flat bottom with concave, and concave more products.



气循环功能

- 加快吹瓶时瓶样内部表面的冷却速度；
- 有两种气循环的控制模式可选；
- 提高生产效率，缩短瓶样成型周期。

Air Cycle Function

- Speed up the cooling;
- There are two kinds of air cycle function for alternative;
- Increase the productivity and shorten the cycle time.



二次定径冷却装置(T16288A)

- 加快吹瓶时瓶样内部表面的冷却速度；
- 提高瓶样离模温度，把瓶口定径及冷却转移到二次定径位置；
- 提高生产效率，缩短瓶样成型周期。

Secondary Sizing Device(T16288A)

- Speed up the cooling;
- Sizing and cooling the bottle neck at second time;
- Increase the productivity and shorten the cycle time.



机外锣口装置

用于剔除瓶口多余溢料。

Outside spin trimmer device

To remove the excess spillage from the bottle mouth.

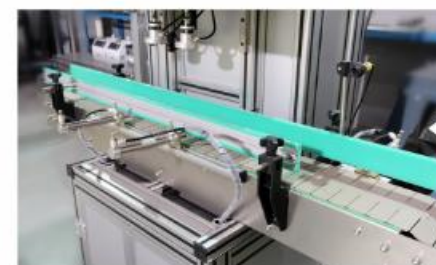


模内贴标

吹制制品前把标签放入模具内，再借用制品本身的热度将标贴紧贴于制品表面。

In Mold Labeling

Before blowing the product, put the label into the mold, and then use the heat of the product itself to stick the sticker on the surface of the product.



测漏机

制品在线测漏机，可以有效的检测出瓶子是否有漏气的现象。

Leakage Detection Machine

Test whether bottle leakage on production line.



中央供料系统

中央供料最新研发的电气自动化控制系统，可连接以太网，实现互联网远程监控和访问，实时监控设备运行状态并可连接客户数据库，上传生产数据和生产报表，从而达到在办公室或控制中心对整厂进行集中控制的效果。

Central Feeding System

The latest electromatic system,it could achieve remote access or monitoring after connecting Ethernet.Offer the real-time monitoring.It could connect the your database and upload production statement.