ULTRAMAC-T 系列可变径超声波塑料导管在线测厚系统

ULTRAMAC-T series of Diameter Adjustable Online Ultrasonic Thickness Measuring System for Plastic Tube



沃思ULTRAMAC-T 系列可变径超声波塑料导管在线测厚系统，适用于测量由不同材质构成的多层塑料管材，系统可实时测量、显示并记录每一层的厚度、外径、偏心和不圆度等，内置预警功能帮助用户将质量隐患杜绝在生产过程中。

The ULTRAMAC-T series product is available to measure multi-layers pipe consist of different materials. This system can real time measure, display and record the wall thickness and outer diameter, eccentricity and ovality of each layer. The built-in warning function helps users eliminate quality hazards in the production process.

适用范围

汽车刹车管、油管、介入号管等。

Applications

Auto brake hose,oil tube,catheter etc.

本系统对生产带来的效益

- 采用高品质部件，核心部件美国进口；
- 降低和杜绝型料管材生产质量风险，提高产品质量；
- 缩短开机时间、降低产品废品率；
- 完整的生产数据记录和存档功能；
- 自动生成管材质量统计报告；
- 根据不同厚度匹配对应探头，适应性广；
- 不同规格管材实现自动适应；

Benefits

- Top quality of pare parts,imported core parts from USA;
- Reduce quality risk and get improvement in production;
- Shorten the start-up time and reduce the scrap rate;
- Complete production data record and archiving function;
- Auto-generate pipe quality report;
- Matching the corresponding probe according to different thickness,wide adaptability;
- Different specifications of pipe to achieve automatic adaptation

系统特点 System Features

智能自适应对中系统

- 结构与控制全自动对中系统：无需依赖HF块，可自适应 1-32mm 外径规格的管径，操作更便捷；
- 探头与夹紧对中装置自动同步调节，使测量状态达到最佳，保证数据测量的准确性和稳定性；
- 系统可根据设定规格自动夹紧管材，也可通过手动方式调节夹紧状态；
- 执行端配置有编码器，对执行机构的位置进行实时反馈，使位置控制更精确；
- 操作与管理优化：操作复杂度降低 60%，减少人工成本，提升设备管理效率。

高精度闭环控制技术

- 同步联动调节：探头与夹紧装置实现 ±0.1mm 精度同步调节， 确保最佳测量状态；
- 实时反馈保障：配备编码器实时反馈对中 / 测量位置数据，测量误差 < 0.05mm，保证数据准确性与稳定性。
- 界面实时显示夹紧数值，做到调节位置量化。

双模式灵活夹紧系统

- 自动夹持模式：支持按预设规格参数快速切换，实现管材自动化夹紧，提升作业效率；
- 手动微调模式：兼容特殊工况需求，可手动调节夹紧状态，增强设备适用性。

可视化智能交互系统

- 实时数据显示：通过 HMI 界面实时数字展示夹紧力、位置参数，直观呈现设备运行状态；
- 量化可控调节：调节过程全程量化，无需依赖操作人员经验，避免人为操作误差。

多重安全防护机制

- 过载保护设计：集成避障弹簧机构，可承受 > 200N 过载力，防止对中结构受损；
- 防撞与降故障：搭配自动回弹防撞设计，设备故障率降低 45%，延长设备使用寿命。

Intelligent Adaptive Centering System

- The structure and control are fully automatic centering system: Without relying on fixed parts, adapt to pipe diameters ranging from 1-32 mm.
- The probes automatically adjust synchronously with the clamping centering device to achieve the best measurement state, ensuring the accuracy and stability of data measurement.
- The system can automatically clamp the tube according to the set specifications, or adjust the clamping state manually.
- The execution end is equipped with an encoder that provides real-time feedback on the position of the actuator, making position control more accurate.
- The complexity of operations has been reduced by 60%, reducing the training cost and improving the management efficiency.

High Precision Closed-loop Control Technology

- Synchronously linkage adjustment: Probe and clamping device achieve synchronous adjustment of ±0.1 mm.
- Real time feedback guarantee: Equipped with encoder for a real-time feedback of centering/ measuring position data, with a measurement error of less than 0.05 mm, ensuring data accuracy and stability.
- Real time display of clamping values on the interface.

Dual Mode Flexible Clamping System

- Automatic clamping mode: Supports quick switching according to preset specification parameters, realizing automatic clamping of tubes.
- Manual Fine-tuning mode: Compatible with special working conditions, the clamping state can be manually adjusted to enhance equipment applicability.

Visualized Intelligent Interactive System

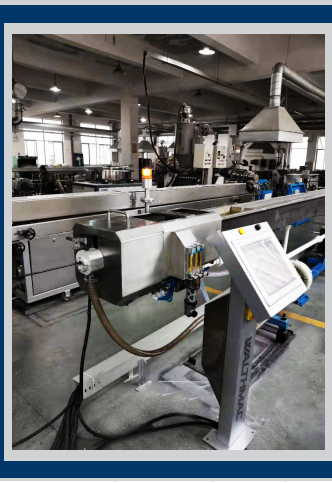
- Real time data display: Real time digital display of clamping force and position parameters through human-machine interface, visually presenting the operating status of the equipment;
- Quantified controllable adjustment: Quantification of the entire adjustment process, avoiding human operational errors.

Multiple Security Protection Mechanisms

- Overload protection design: Integrated with obstacle avoidance spring structure, it can withstand overload forces more than 200 N to prevent damage to the centering structure.
- Collision avoidance and reduce faults: Equipped with automatic rebound anti-collision design, the equipment failure rate has been reduced by 45%, exten ding the service life of the equipment.

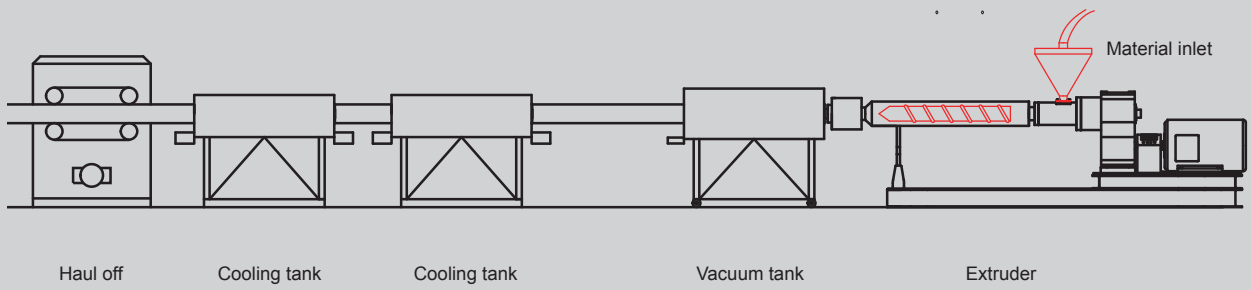




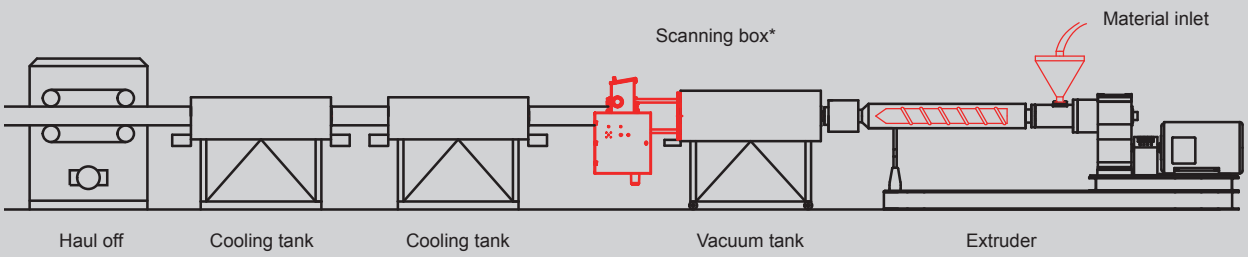


安装示意图 Installation diagram

原有生产线 Original production line



安装在线测厚系统 Install online ultramac system



*ULTRAMAC有4种安装方式（小箱内、法兰、小车、独立）。

*There are 4 installation methods for ULTRAMAC (inside water tank installation , flange installation, moved suppotor installation , independent installation)

产品配置 Product configuration

型号 Model	最多测量层数 Measuring layer(Max.)	外径测量范围 (mm) OD measuring range	壁厚测量范围 (mm) Wall thickness measuring range
ULTRAMACT-012-4T/S	1	1-12	0.12-2.5
ULTRAMACT-024-4T/S	1	4-24	0.25-6
ULTRAMACT-032-4T/S	1	6-32	0.25-6
ULTRAMACT-012-4T/S	5	1-12	0.12-2.5
ULTRAMACT-024-4T/S	5	4-24	0.25-6
ULTRAMACT-032-4T/S	5	6-32	0.25-6

产量*：基于特定原料和沃思特定方法测定。

Output*: Based on specific raw materials and the specific methods of WalthMac.

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TECHNOLOGY UNVEILS VALUE

TASTE INTERPRETS QUALITY

WALTHMAC

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沃思坚持“产品即是艺术品”的基本要求，既满足客户对功能的需求又满足品质和品味的需要，已获得ISO9001、CE、国家级高新技术企业、专精特新企业、瞪羚企业等多项认证，同时拥有超六十项核心技术成果及自主技术储备。

WalthMac is a national high-tech enterprise with industry-leading technology. With the goal of high automation & AI smart workshop, concentrating on helping users achieve complete production automation, improve products quality save raw materials and sharply cut down the dependence of personal experiences of operator.

' Product is a work of art ' WalthMac insists this basic principle and practices it on all of our products, keep pushing forward to extreme perfect function performance. Our productions already approved by various certifications like CE, ISO9001 and also hornored obtained name of National High-tech Company, Specialized and Sophisticated Company, Gazelle Company with over 60 core technologies and idependent technology reserves.

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