PathFinder™ Tube Sealer Module

Designed to automate the post-analytical function of foil sealing

Brooks' new PathFinder™ Tube Sealer Module (TSM) is an automated module for foil sealing uncapped specimen collection tubes and is designed specifically for integration into an automation platform such as an analyzer or track based system.

The TSM represents Brooks' third generation of foil sealing technology. It introduces several key improvements over the existing design as used in Brooks' PathFinder™ laboratory product range.

These include a higher throughput, the removal of all pneumatics, a lower energy usage and a more compact size.

Scope & Application

The principle of operation involves the module feeding the end section from a roll of sealing foil directly over a presented uncapped tube before being cut in situ. The cut foil is then crimped and welded onto the top of the tube. Unlike other technologies where the cut foil is transferred to the top of the tube (often by vacuum), there is no handling of the individual foil seal which in turn leads to higher reliability and throughput. The crimping of the foil is performed at the same work position as the sealing which further enhances reliability and throughput.

It is possible to customize the TSM for your specific application including:

- The industrial design, protective covers, and mounting requirements
- Power, communication interface and auxiliary outputs
- Packaging of the Tube Sealing Module and the capping foil consumable
- Foil seal bonding strength
- Service and diagnostic reporting

Key Benefits

- No pneumatics or vacuum required reducing overall cost of ownership and improving reliability
- Reduces consumable cost and eliminates errors from moving/handling the foil cap
- Improved reliability of downstream automation
- Foil seal quality can be customized to specific requirements of a customer, from a protective dust cap to a firmly welded leak free seal
- Low energy usage, instant heater ready state, no hot surfaces to touch, better reliability than resistive element heaters
- Lower operator intervention, increased walkaway time
- Cheaper than alternative capping methods or pre-cut foil
- Handles a wide range of plastic tube sizes and types without requiring any adjustments
- Easier to integrate into an analyzer or track based system
- Self-test routines and performance metrics allow for proactive servicing

Key Features

- Fully electric operation
- Foil cap cut from a roll of capping tape in situ
- Foil seal is crimped around the top of the tube
- Active control of seal strength
- Inductive heating
- On board capacity of 20,000 seals
- Cost of foil seal is less than a push on cap
- Can foil cap tubes with a diameter range of 12-17mm and a height typically from 65 - 120mm
- Compact size
- Diagnostic messaging and reports

PathFinder™ Tube Sealer Module

Technical Specifications

Specifications

Dimensions	22cm W x 32cm D x 52cm H (Demonstration unit)
Power supply	24V DC
Power consumption	45W
Compressed air	Not required
Tube dimensions	12 - 17mm diameter Typically, 65 - 120mm in height (Depends on tube carrier and track design)
On-board Capacity	20,000 seals per roll
Throughput	Typically 500 - 600 tubes/hour (depends on installation conditions and required seal performance)
Tube types	Various blood collection tube materials (such as PP, PETG, PS) with a flat top Not suitable for glass tubes
Foil seal material	Laminated Aluminum foil
Foil seal performance	Weld strength is configurable Foil seal is tested to be leak free down to – 20 deg C (but can be configured for a lower temperature if required)
PM intervals	Recommended every 250,000 cycles
Set up/Operating Notes	Simple bolt on addition to an automation system - 3 fasteners with repeatable alignment features

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