



Aim Lab's new 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 analyser or track based system.

Aim Lab first introduced foil sealing of sample collection tubes in 1999 on the PathFinder Mark II laboratory automation system. The TSM represents Aim Lab's third generation of foil sealing technology. It introduces several key improvements over the existing design as used in Aim Lab's 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 auxillary outputs.
- Packaging of the Tube Sealing Module and the capping foil consumable.
- Foil seal bonding strength.
- Service and diagnostic reporting.

Product Specifications

Dimensions

-22cm W x 32cm D x 52cm H
(demonstration unit)

Power Supply

24 VDC

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 caps 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 aluminium 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 interval

Recommended every 250,000 cycles

Set up/ Operating Notes

Simple bolt on addition to an automation system - 3 fasteners with repeatable alignment features

Features	Benefits
Fully electric operation	No pneumatics or vacuum required reducing overall cost of ownership and improving reliability
Foil cap cut from a roll of capping tape in situ	Reduces consumable cost and eliminates errors from moving/handling the foil cap
Foil seal is crimped around the top of the tube	Improved reliability of downstream automation
Active control of seal strength	Foil seal quality can be customised to specific requirements of a customer, from a protective dust cap to a firmly welded leak free seal
Inductive heating	Low energy usage, instant heater ready state, no hot surfaces to touch, better reliability than resistive element heaters
On board capacity of 20,000 caps	Lower operator intervention, increased walkaway time
Cost of foil seal is less than a push on cap	Cheaper than alternative capping methods or pre-cut foil
Can foil cap tubes with a diameter range of 12-17mm and a height typically from 65 - 120mm	Handles a wide range of plastic tube sizes and types without requiring any adjustments
Compact size	Easier to integrate into an analyser or track based system
Diagnostic messaging and reports	Self-test routines and performance metrics allow for proactive servicing

Ordering Information

Part No.: PS-TSM-A016 Generic Tube Sealer Module

(excludes power supply, covers, and tube clamping sub-system if required).

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