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Validated Memory Flap Unit — QA & Validation Justification

Purpose
Provide a concise, quality-focused justification for implementing a validated memory (separator) flap unit in tablet counting machines, aligned with modern QA, validation, and audit expectations.

Applicable platforms
Cremer CF1220 and CVC1220 style machines using pneumatic memory (separator) flaps.

Intended use
To provide independent verification that each memory flap has reached its intended **end position** during normal operation of tablet counting machines, supporting validated count integrity.

Validation impact
The validated memory flap unit introduces no change to the underlying actuation logic. Existing pneumatic control sequences remain unchanged; the system adds independent **end-position and timing verification** only.

The validation gap in traditional memory flaps
Conventional pneumatic memory flaps operate on assumed behaviour: a command is issued, and the system implicitly trusts that the mechanical movement occurred as intended. In regulated environments, this assumption represents an unverified critical step in the counting process **with direct impact on count integrity**.

What the validated memory flap provides
• Independent confirmation that each flap reaches its intended **end position**.
• Detection of incomplete, delayed, or abnormal motion in real time.
• Clear distinction between commanded motion and verified outcome.
• Objective evidence that a critical mechanical action occurred as required.

Why this matters for QA and audits
• Reduces reliance on procedural controls and operator assumptions.
• Strengthens the defensibility of the counting process during audits.
• Supports deviation investigations with measurable data rather than inference.
• Aligns with risk-based approaches to validation and process control.

Validation without changing actuation technology
The validated memory flap unit achieves motion verification without replacing proven pneumatic actuation. Actuation and motion verification are handled as separate subsystems, allowing existing mechanical designs to remain intact while adding the observability required by modern QA standards.

Operational impact
• No reliance on specialised servo components or OEM-only repair paths.
• Pneumatic components remain field-serviceable by standard maintenance staff.
• Fault detection occurs before miscounts can propagate downstream.

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Designed for perfection, durability, and serviceability — not just functionality.