

# OPERATOR USER MANUAL

## Purpose of the System

- The Pneumatic Laser QC System automatically inspects laser welding depth during production, determines PASS / FAIL results, and generates QR-based traceability for accepted parts.
- The system is designed for continuous shop-floor operation with minimal operator intervention.

## Operator Login & Access

- System runs in kiosk mode
- No login required for normal operation
- Operators cannot access settings
- Critical actions are password-protected

## Main Operator Screen (Dashboard)



Figure 1: Main Dashboard

## What the Operator Sees

- Live laser waveform graph
- Latest inspection result (PASS / FAIL)
- QR code (PASS only)
- Recent production cycles
- System health indicators (PLC, Printer, Modem)

## Operator Responsibilities

- Monitor PASS / FAIL status
- Ensure printer is online
- Respond to FAIL conditions as per SOP
- Inform supervisor if system error appears

## ***Understanding PASS / FAIL Results***

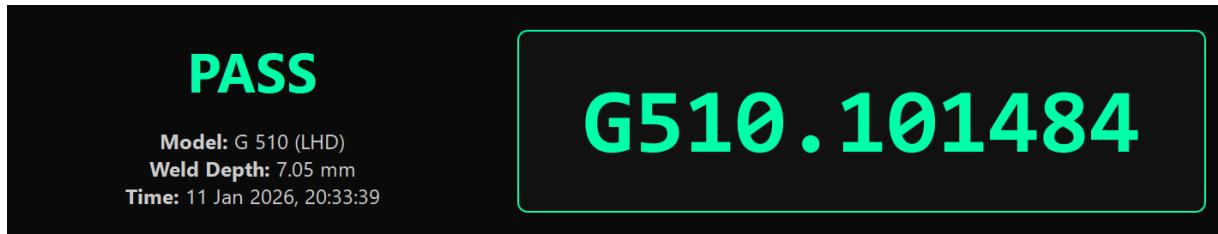


Figure 2: Result Panel - Pass

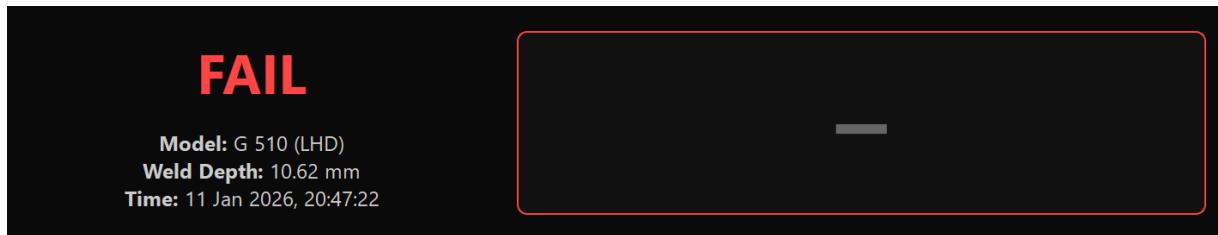


Figure 3: Result Panel - Fail

### **PASS**

1. Weld depth within configured limits
2. QR code generated automatically
3. Part allowed to move to next process

### **FAIL**

1. Weld depth outside limits
2. No QR code generated
3. Part must be segregate

## QR Label Printing (Operator)

### Automatic Printing

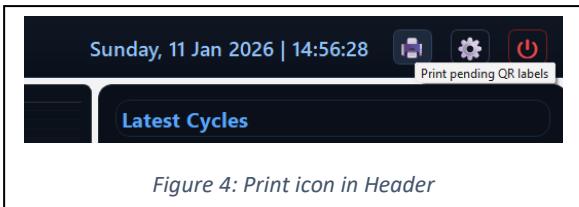


Figure 4: Print icon in Header

1. PASS parts are queued automatically
2. Labels are printed without manual action



Figure 6: QR Label - LHD



Figure 5: QR Label - RHD

### Manual Printing (Pending Queue)

1. Open QR Printing
2. Select “Pending QR Labels”
3. Select required rows
4. Click Print Selected
5. Confirm print

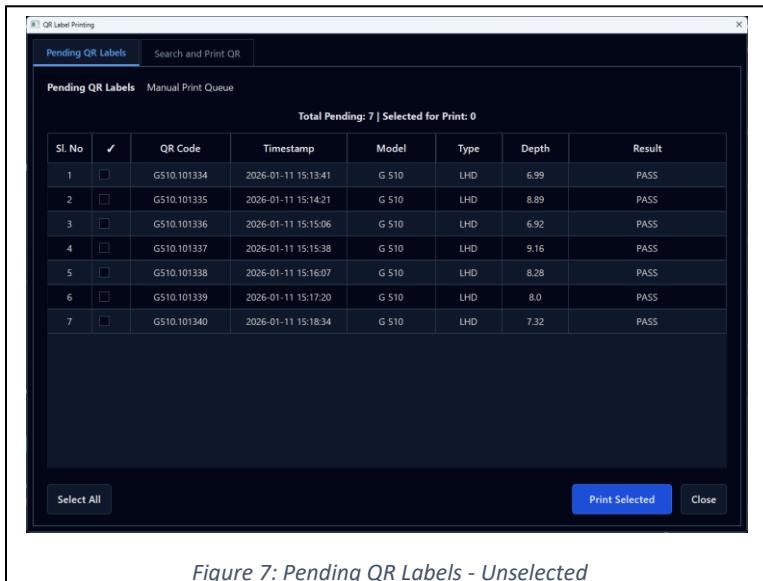


Figure 7: Pending QR Labels - Unselected

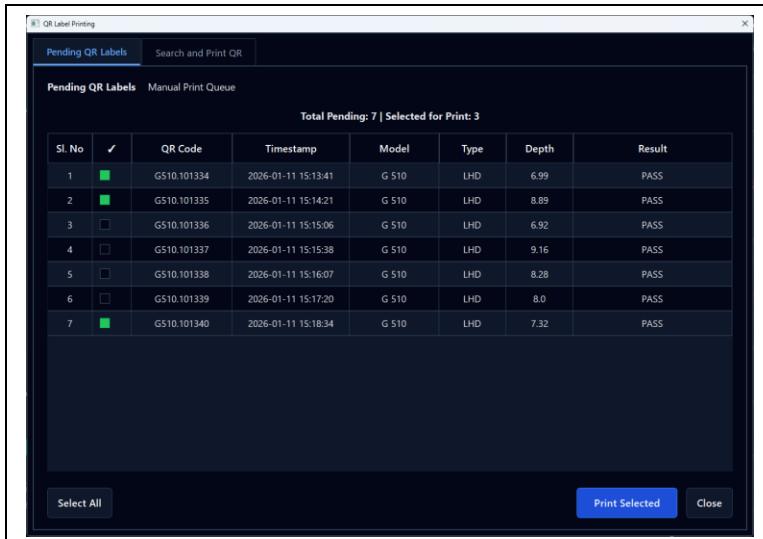


Figure 8: Pending QR Labels - 3 rows selected

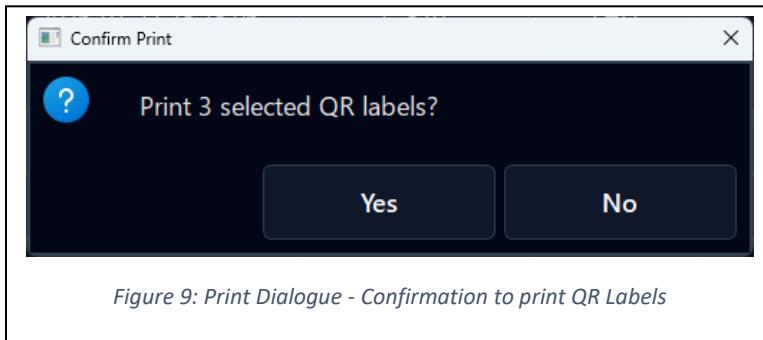


Figure 9: Print Dialogue - Confirmation to print QR Labels

## Manual QR Search & Reprint

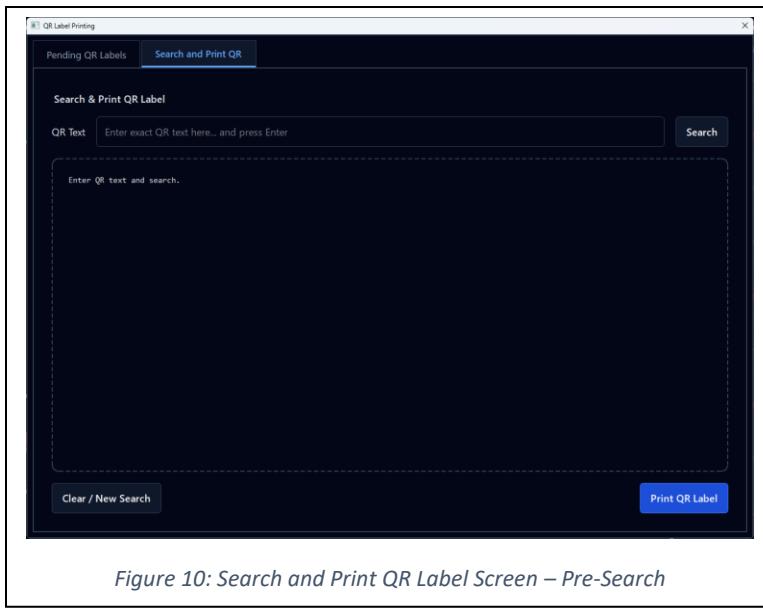


Figure 10: Search and Print QR Label Screen – Pre-Search

## When to Use

1. QR label damaged
2. Printer failure during print
3. Audit or verification request

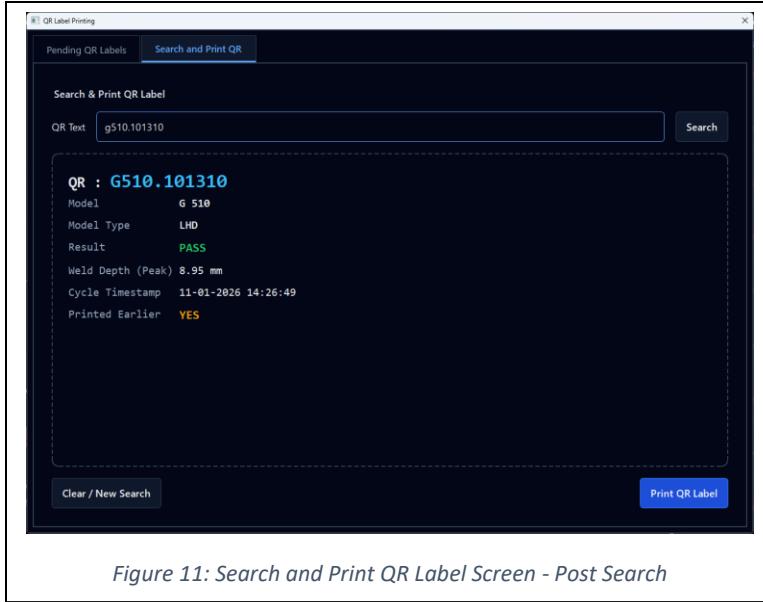


Figure 11: Search and Print QR Label Screen - Post Search

## Steps

1. Open Search & Print QR
2. Enter exact QR text
3. Click Search
4. Verify preview details
5. Click Print QR Label

## Operator Access & Security

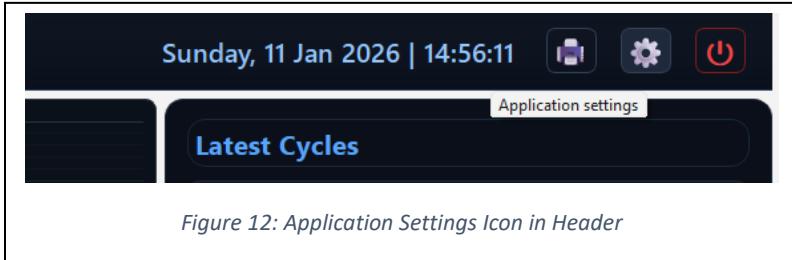


Figure 12: Application Settings Icon in Header

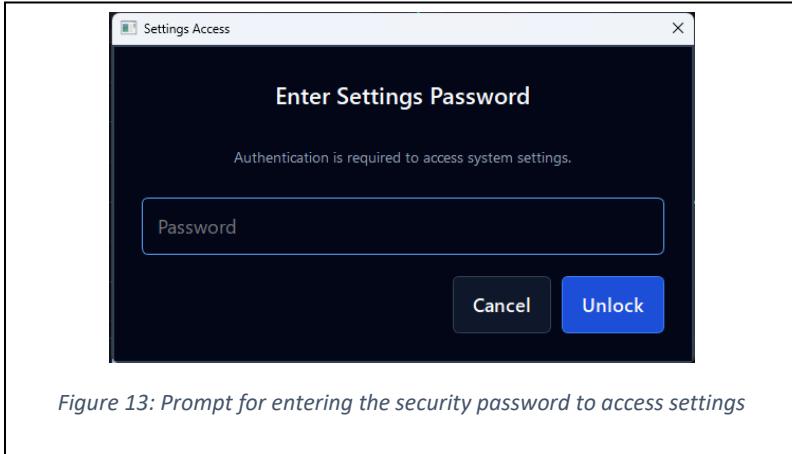


Figure 13: Prompt for entering the security password to access settings

## Model Management

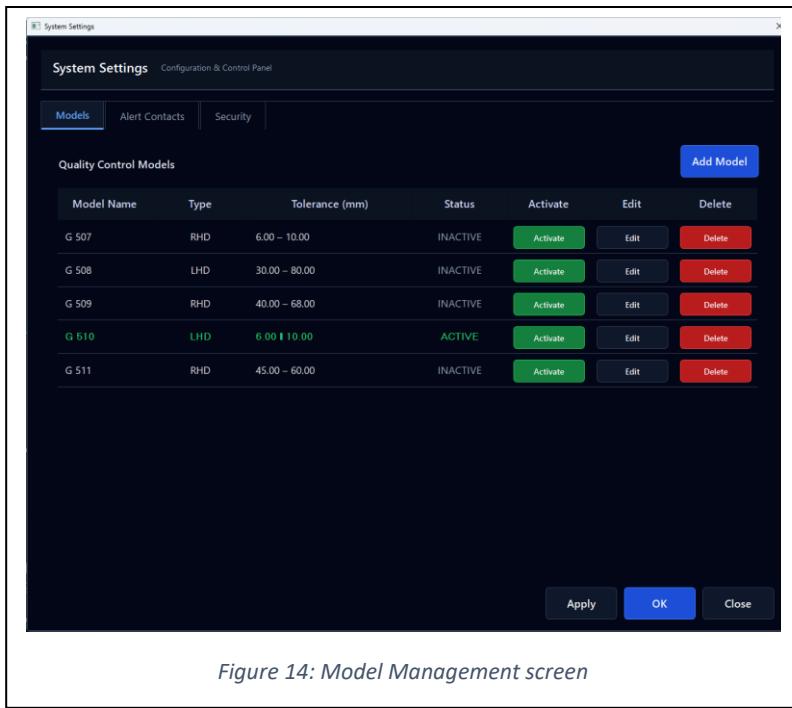


Figure 14: Model Management screen

Operator access is protected by a settings password.

Protected functions include:

1. Model management
2. QR configuration
3. Alert contact management
4. System shutdown

Each model represents a product with:

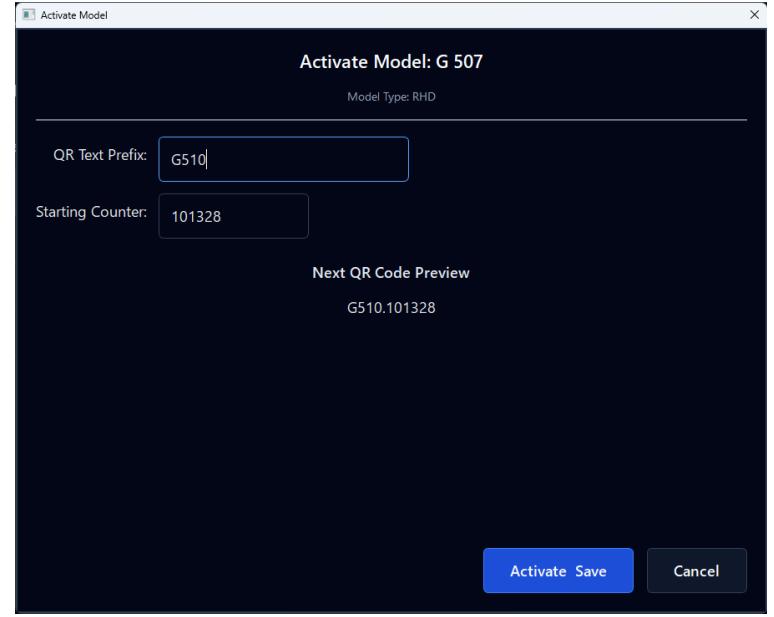
1. Welding tolerance limits
2. Model type (RHD / LHD)
3. QR behavior

Supervisor Actions

1. Add new models
2. Edit tolerance limits
3. Activate one model at a time
4. Delete inactive models only

- ✓ Only one model can be active
- ✓ Active model is clearly highlighted in green colour

## Model Activation & QR Rules



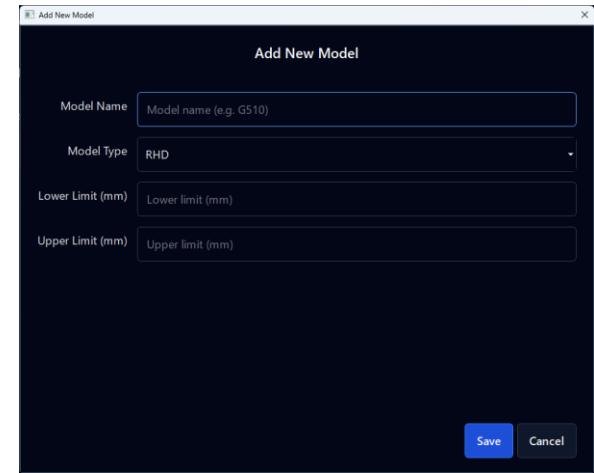
The screenshot shows the 'Activate Model' dialog box. At the top, it displays 'Activate Model: G 507' and 'Model Type: RHD'. Below these, there are two input fields: 'QR Text Prefix' containing 'G510|' and 'Starting Counter' containing '101328'. A preview section labeled 'Next QR Code Preview' shows the value 'G510.101328'. At the bottom, there are 'Activate' and 'Save' buttons.

*Figure 15: Activate Model Screen*

During Activation, Supervisor can:

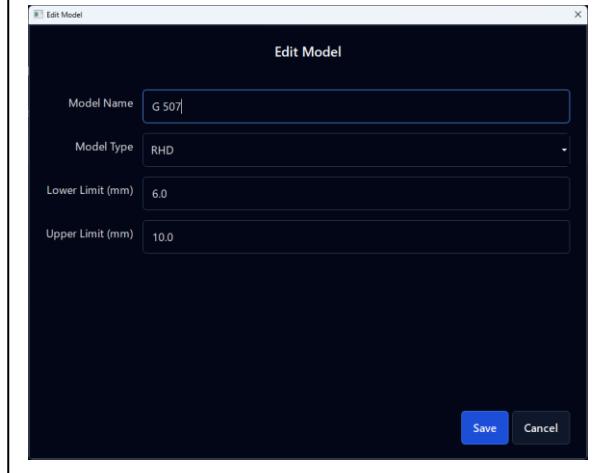
1. Set QR prefix
  2. Set starting QR counter
  3. Preview next QR label
- ✓ Prevents duplicate QR codes
  - ✓ Ensures traceability consistency

## Add and Edit Models



The screenshot shows the 'Add New Model' dialog box. It has four input fields: 'Model Name' (placeholder 'Model name (e.g. G510)'), 'Model Type' (selected 'RHD'), 'Lower Limit (mm)' (placeholder 'Lower limit (mm)'), and 'Upper Limit (mm)' (placeholder 'Upper limit (mm)'). At the bottom are 'Save' and 'Cancel' buttons.

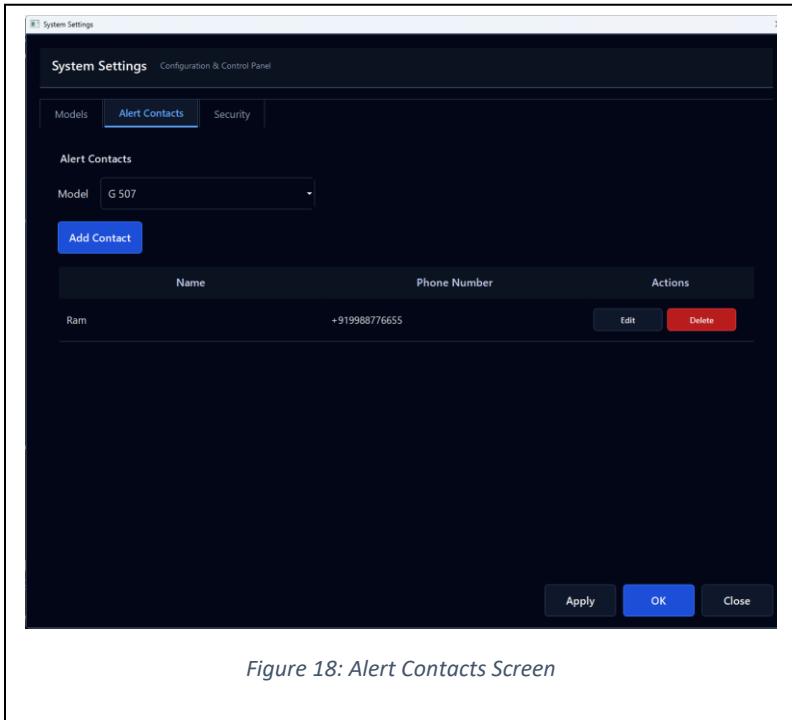
*Figure 16: Add New Model Screen*



The screenshot shows the 'Edit Model' dialog box. It contains the same four input fields as Figure 16: 'Model Name' (value 'G 507'), 'Model Type' (value 'RHD'), 'Lower Limit (mm)' (value '6.0'), and 'Upper Limit (mm)' (value '10.0'). At the bottom are 'Save' and 'Cancel' buttons.

*Figure 17: Edit Existing Model Screen*

## Alert Contact Management



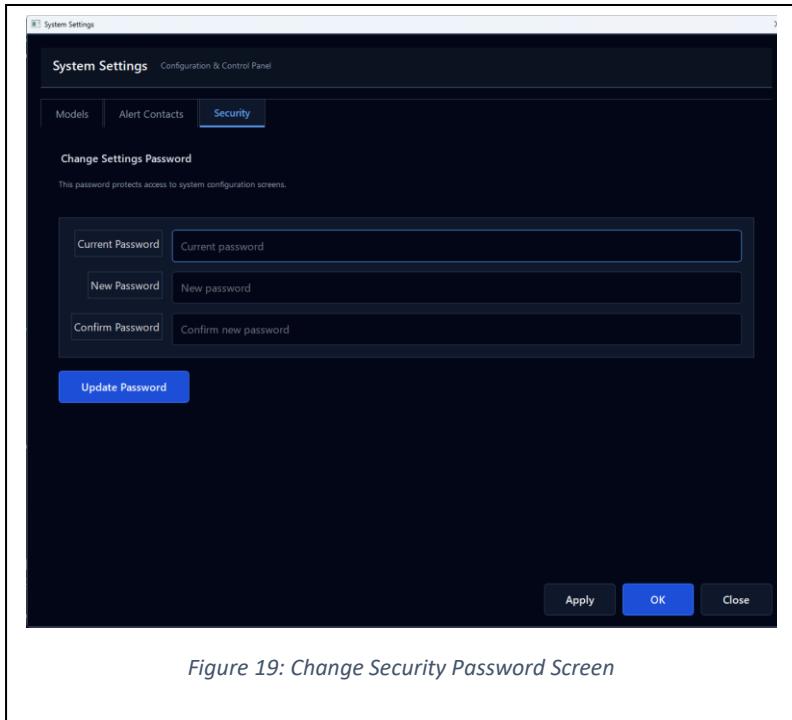
The screenshot shows the 'System Settings' configuration panel with the 'Alert Contacts' tab selected. A dropdown menu under 'Model' is set to 'G 507'. Below it, a table lists a single contact named 'Ram' with the phone number '+919988776655'. Action buttons for 'Edit' and 'Delete' are shown next to each row. At the bottom are 'Apply', 'OK', and 'Close' buttons.

Figure 18: Alert Contacts Screen

Define who receives SMS alerts for quality/system events.

1. Model-specific contacts
2. Add / Edit / Delete contacts
3. Phone number validation

## Password Management

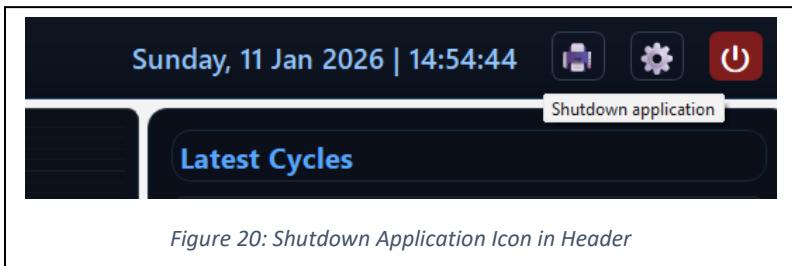


The screenshot shows the 'System Settings' configuration panel with the 'Security' tab selected. It displays a 'Change Settings Password' section with instructions: 'This password protects access to system configuration screens.' Below are three input fields: 'Current Password' (labeled 'Current password'), 'New Password' (labeled 'New password'), and 'Confirm Password' (labeled 'Confirm new password'). An 'Update Password' button is at the bottom. At the very bottom are 'Apply', 'OK', and 'Close' buttons.

Figure 19: Change Security Password Screen

1. Maintain confidentiality
2. Change password periodically
3. Ensure only authorized access

## ***Safe Shutdown Procedure***



1. Authenticate with password
2. Confirm shutdown warning
3. Ensure no active cycle is running
4. Exit application safely

