



ADVANCED USER MANUAL

(Manual No. I034EN – Issue 1)

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Contents

	Page
Chapter 1 Before You Begin	1-1
1.1 Note on Software Use Chapters	1-1
1.2 Double Seam Monitor Advanced User	1-2
Chapter 2 About INTEGRA	2-1
2.1 System Overview	2-1
2.1.1 The function of INTEGRA	2-1
2.2 Benefits of INTEGRA	2-3
2.2.1 Detectable Defects	2-3
2.3 System Components	2-5
2.3.1 Control Panel	2-6
2.3.2 Sensor Junction Box	2-6
2.3.3 Eject Junction Box	2-6
2.3.4 Touch Screen PC	2-6
Chapter 3 Software Interface	3-1
3.1 Display Overview	3-1
3.1.1 Touch Screen	3-1
3.1.2 Navigator	3-1
3.1.3 User Modes.....	3-1
3.2 Common Functions	3-2
3.2.1 Permanent Section of Screen.....	3-2
3.2.2 Tab Selection.....	3-5
3.3 Main Screen	3-6
3.3.1 Main Screen Live Tab Screen	3-6
3.3.2 Main Screen Live Tab Function.....	3-7
3.3.3 Main Screen Shapes Tab Screen	3-8
3.3.4 Main Screen Shapes Tab Function.....	3-9
3.3.5 Main Screen Live Base Load	3-10
3.3.6 Main Screen Live Tab Base Load	3-11
3.4 Trends Screen	3-12
3.4.1 Trends Screen Live Tab Screen	3-12
3.4.2 Trends Screen Live Tab Function.....	3-13
3.4.3..... Trends Screen SPC Charts Tab Screen	3-16
3.4.4 Trends Screen SPC Charts Tab Function.....	3-17
3.5 Ejects Screen	3-19
3.5.1 Ejects Screen Rejects Tab Screen	3-19
3.5.2 Ejects Screen Rejects Tab Function.....	3-20

3.5.3	Ejects Screen Pareto Tab Screen	3-21
3.5.4	Ejects Screen Pareto Tab Function	3-22
3.5.5	Ejects Screen Manual Sample Tab Screen	3-23
3.5.6	Ejects Screen Manual Sample Function	3-24
3.6.	Settings Screen	3-26
3.6.1	Setting Screen Specs Tab screen	3-26
3.6.2	Setting Screen Specs Tab Function	3-27
3.6.3	Setting Screen Settings Tab Screen	3-28
3.6.4	Setting Screen Specs Tab Function	3-29
3.7	Advanced Screen	3-30
3.7.1	Advanced Screen Input Signals Tabs Screen	3-30
3.7.2	Advanced Screen Input Signals Tabs Function	3-31
3.7.3	Advanced Screen Password Tab Screen	3-32
3.7.4	Advanced Screen Password Tab Function	3-33
Chapter 4	Understanding the Results	4-1
4.1	Examples of Defects detected	4-1
4.1.1	Missing End	4-2
4.1.2	Knocked Down Flange	4-3
4.1.3	Chipped Chuck	4-4
4.1.4	Pleats	4-5
4.1.5	Split Flange	4-6
Chapter 5	System Maintenance	5-1
5.1	Electrical Cabinets	5-1
5.2	Adapted Seaming Cam	5-1
5.3	Software	5-1
5.4	System Calibration	5-1
5.5	Proximity Sensors	5-2
5.5.1	Determining whether a sensor is malfunctioning	5-2
5.5.1.1 Angelus 12 or 10 head Seamers	5-3
5.5.2	Sensor Specifications	5-3
5.5.3	Wired Sensor and Connector for Wired Sensor	5-4
5.5.4	Procedure for replacing sensors	5-4
Chapter 6	Task Based Instructions	6-1
6.1	Electrical Cabinets	6-1
6.1.1	Level I	6-1
6.1.2	Level II	6-1
6.1.3	Level III	6-1
6.2	Level 1 Tasks	6-2
6.2.1	Get Ejection Results	6-2

6.2.2	Eject Cans Manually.....	6-2
6.2.3	Check Seamer Performance	6-3
6.2.4	React to Pop UP Messages.....	6-4
6.3	Level II Tasks.....	6-5
6.3.1	Check Can & End Specification at start of shift.....	6-5
6.3.2	Validate INTEGRA at line start up	6-6
6.3.3	Review Ejected Cans	6-7
6.4	Level III Tasks.....	6-8
6.4.1	Disable / Enable INTEGRA connections to Line Control	6-8
6.4.2	Recognise problems.....	6-8
6.4.3	Check signals received by INTEGRA	6-9
6.4.4	Access Password protected areas	6-10
6.4.5	Target Setting the INTEGRA	6-11
6.4.6	Reset SPC calculations.....	6-11
6.4.7	Check Limits	6-12
6.4.8	Reset SPC calculations.....	6-13
6.4.9	Check Limits	6-14

Appendix 1 Flow Chart of Screens..... A1-1

Appendix 2 Event Messages..... A2-1

A2.1	Excessive Failures	A2.1
A2.2	Messages from RIO Controller	A2.6
A2.3	Recorded Actions.....	A2.7
A2.4	Internal Messages from RIO Controller.....	A2.8

Chapter 1: Introduction

This manual is written for use during training in addition to the standard training presentations i.e. Presentations - I036EN INTEGRA Operator Training and I037EN INTEGRA Advanced User Training, subsequently as a reference manual or aide-memoir.

- **Chapter 2: About INTEGRA** - gives an overview of INTEGRA and briefly explains each of its components.
- **Chapter 3: Software Interface** - explains the functions of each software screen.
- **Chapter 4: Understanding the results** - explains how to interpret the results obtained from INTEGRA.
- **Chapter 5: System Maintenance** - lists common tasks for INTEGRA maintenance.
- **Chapter 6: Task-Based Instructions** - contains step by step instructions for all tasks that can be carried out using the INTEGRA.
- **Appendix 1: Flow Chart of Screens**
- **Appendix 2: Event Messages** - contains a list of messages displayed on the Touch Screen PC.

1.1 Note on Software Use Chapters

There is a certain amount of repetition in this manual: the user interface (software) is described in two different sections. In **Chapter 3**: each different screen is presented and different features are explained in detail. In **Chapter 6** step-by-step instructions are provided, in Standard Operating Procedure (SOP) format, for each task that can be performed using the INTEGRA.

- To carry out a specific task, look in **Chapter 6**
- To understand of a more general aspect, refer to **Chapter 3**

1.2 Double Seam Monitor Advanced User

We recommend that an '**INTEGRA Champion**' is nominated in each plant. The 'INTEGRA Champion' would:

- Be responsible and taker ownership for INTEGRA.
- Offer first line support.
- Work closely with colleagues to sustain the benefits achieved with your INTEGRA System.
- Create an effective link between the plant and supplier.
- Offer 'local' support.

One or more INTEGRA Advanced Users, who would have password access to the reserved parts of INTEGRA system, should assist the Champion. Advanced Users would typically be mechanics or technicians who are responsible for Seamer maintenance, and electricians who are responsible for maintenance of electrical items.

Quality and production staff should also be trained to use INTEGRA in order that the system benefits are integrated into factory life.

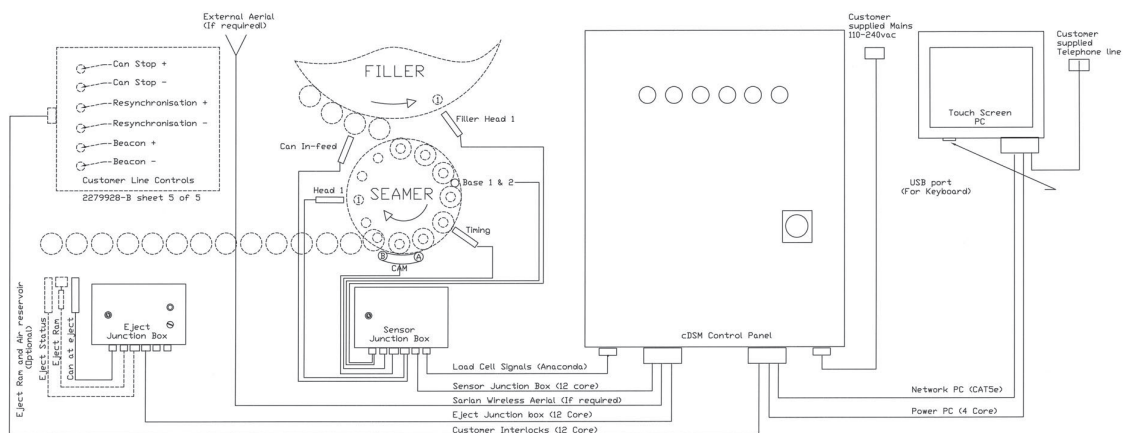
Further more, anyone who regularly works around the Seamer should follow the basic INTEGRA training.

CROWN Technology provides training material in English for Advanced Users and Operator Level INTEGRA use. Training is delivered in English on site. Material is available by arrangement for translation.

Your site's training needs will have been discussed with CROWN when your INTEGRA installation was agreed, for further information, contact your site INTEGRA Champion.

Chapter 2: About INTEGRA

2.1 System Overview



2.1.1 INTEGRA Scope

The scope of INTEGRA as supplied by CROWN, is to detect gross seaming defects and Seamer machine defects.

INTEGRA also provides the possibility for an independent rejection system to reject the cans that are detected.

INTEGRA is currently available for the following seamers:

MB 450	Angelus 60L
MB449	Angelus 61H
MB 10/6	Angelus 101L
FMC 650	Angelus 121L
FMC 350	Angelus 180S

INTEGRA monitors the force used to seam cans, using load cells inserted in the seaming cam. This force has been shown to be proportional to the seam thickness; hence INTEGRA can detect seam defects related to seam thickness.

INTEGRA provides a continuous live graphical display of seaming force. By setting up the Seamer correctly and maintaining this force within acceptable limits, the average seam thickness can be controlled. Integra also carries out a series of tests that analyse different aspects of the seam, enabling detection of individual defective seams. INTEGRA therefore controls long-term seamer performance as well as permitting the ejection of defective cans from the line.

The seam of every can is checked as it is seamed.

Evaluation of the force and seam thickness for each can against pre-set limits enables Integra to detect defective cans which can then be tracked by the system and ejected from the production line by a separate system, after the seamer.

INTEGRA can also detect Seamer defects that affect the quality of the seamed cans, through a statistical analysis over many produced cans.

An optional part of Integra is the Base Load sensor. This is installed in the lifter cam, and measures lifter spring compression as each can is seamed. The objective of this additional sensor is

- To allow rapid set up after height changes.
- To monitor forces to ensure there is no drift in the process and potentially reduce the frequency of seam checks.
- To identify seam faults associated with short cans such as mushroom flanges.

INTEGRA can be linked into the line, and will then stop production if:

- Too many consecutive cans are ejected (indicating a repetitive problem on the line).
- There is a can count error (in this case the line stop will last less than a minute before production re-starts).

If the system controller fails or INTEGRA malfunctions, the failsafe mode will activate, preventing any cans from being ejected.

2.2 Benefits of INTEGRA

INTEGRA provides the following tools:

- Detection of changes in machine condition
- Detection of machine defects
- Detection of loose or tight seams
- Detection of gross seam defects
- SPC monitoring of the seaming process ^{**1}
- Remote Monitoring of Seamer by CROWN personnel via secure remote link ^{**2}

2.2.1 Detectable Defects

Fault	Individual Cans	Trend Analysis
Critical Defects that can repeatedly occur		
Chipped Chuck	Critical Detectable	Very Likely
Low / High Tightness	Detectable	Detectable
Scrap on Chuck	Possible	Likely
'Mushroom' Flange	Unlikely	Depends upon signal and size
Defects that occur randomly on individual cans		
Double End / No End	Detectable	N/A
Misplaced End	Detectable	N/A
Scrap in Seam	Detectable	N/A
No Second Op Seam	Detectable	Detectable
Knockdown Flange	Depends on signal and size	
Clipped Curls	Depends on signal and size	N/A
False Seam	Depends on signal and size	

PLEASE NOTE:

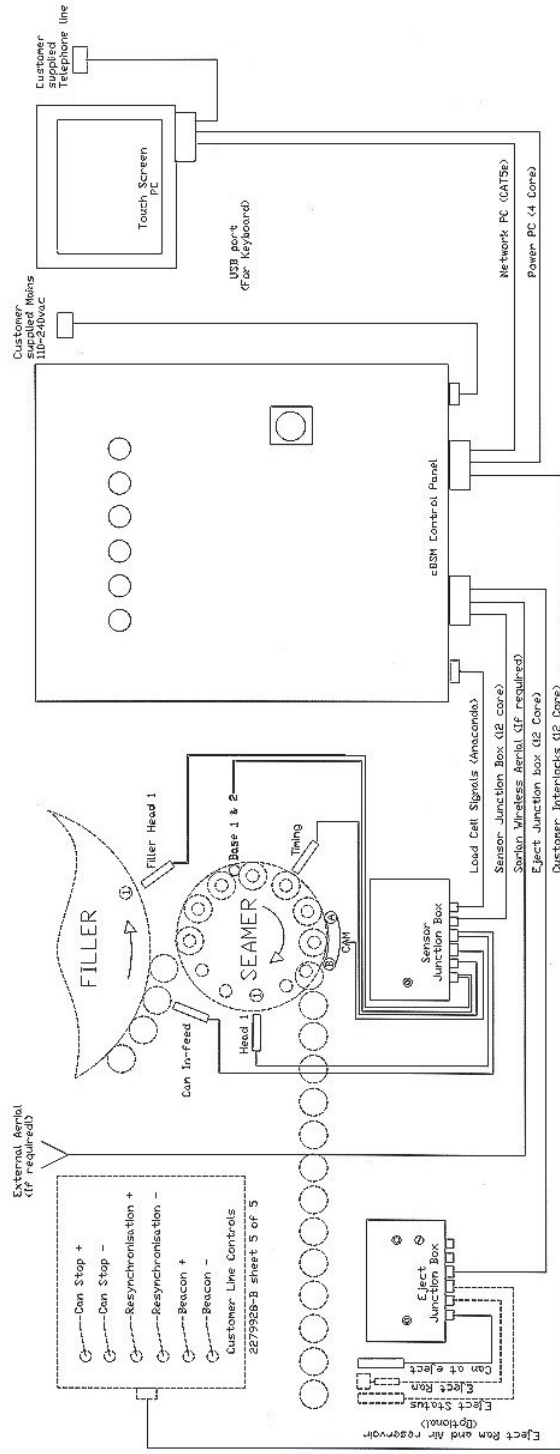
INTEGRA WILL NOT make good seams for you. You make the good seams, and INTEGRA will detect and reject bad ones.

^{**1} The SPC data is available on screen to the operator and is also emailed daily to the customer's nominated email addresses.

^{**2} The remote link is to the INTEGRA Touch screen PC via a secure SSL-VPN link.

It is vital to remember to inspect the quality of the seams regularly by using your Standard Quality Checks.

2.3 System Components



2.3.1 Control Panel

The Control Panel is a stainless steel waterproof case (IP65), which contains the system controller and other components such as the power supply and Ethernet router.

It is connected by cable to the Sensor Junction Box, the Touch Screen PC, and the Eject Junction box

The Control Panel must be kept closed at all times.

2.3.2 Sensor Junction Box

This stainless steel box (IP65) contains terminal for the sensors on the seamer. It is connected by cable to the Control Panel. The sensor inputs from the seamer arrive here.

The Sensor Junction box must be kept closed at all times.

2.3.3 Eject Junction Box

This stainless steel box (IP65) contains terminal for the sensors on the Eject. It is connected by cable to the Control Panel. The Sensor inputs from the Eject arrive here.

The Eject Junction Box must be kept closed at all times.

2.3.4 Touch Screen PC

The Touch Screen PC is a stainless steel waterproof (IP65) screen. As its' name implies, it is possible to navigate by touch through the software. The screen is linked to the Control Panel by an Ethernet cable and a 24 Vdc cable.

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Chapter 3: Software Interface

3.1. Display Overview

3.1.1 Touch Screen

INTEGRA is designed for use with a touch screen and it is not necessary to use a keyboard.

- Try to use the tip of the finger for best control and avoid excessive pressure.
- The touch part of the screen is a 'resistive' membrane and can be used when wearing gloves.
- **NEVER use sharp objects to touch the screen and DO NOT write on the screen with permanent marker pen!**

3.1.2 Navigator

Navigation to the screen you require is in one or two steps

- First select from one of the five icon buttons on the top right hand side of the Menu bar, which you will find on every screen.
- Then select the specific screen you seek from the vertical buttons which appear on the right hand side.

3.1.3 User Modes

Normal Access

- Provides navigation to most screens.
- Essential functions for Operators.

Advanced User

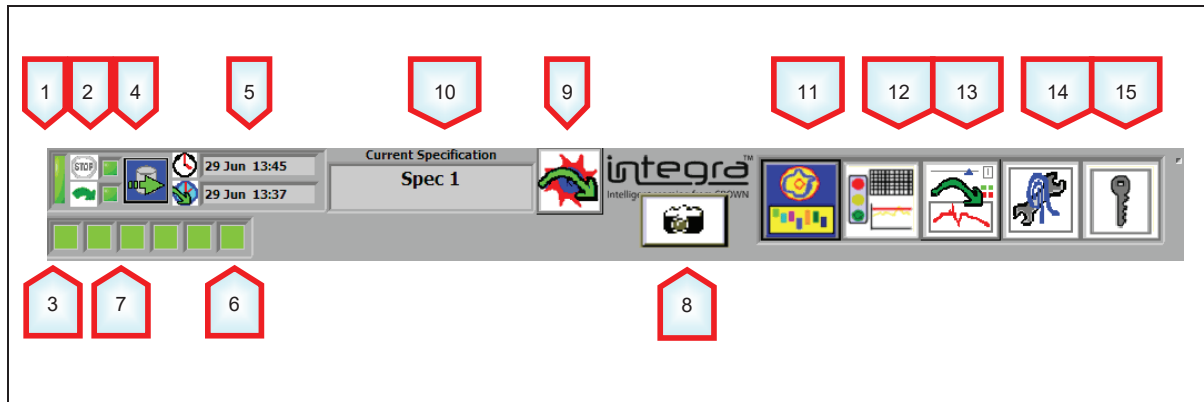
- Access via password.
- Provides navigation to 'advanced' screens
- Limit settings

3.2. Common Functions








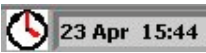






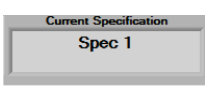
Appendix 1 contains a flow chart diagram of all the screens and tabs that can be accessed.







3.2.1 Permanent section of screen

This band is always visible at the top of the screen, no matter which screen or tab has been selected.



	Name	Icon	Action / Information
1	Network coms		INTEGRA connected to Touch PC
			INTEGRA not connected to Touch PC
2	Stop sign RED		Can Stop has been ACTIVEATED
	GREEN		Can Stop enabled but not Active
	YELLOW or GREY	 	Yellow = Can Stop, disabled by Software Grey = Can Stop, disabled by Hardware
3	Eject Arrow RED		Can Ejection has been ACTIVEATED
	GREEN		Can Ejection is enabled but not Active
	GREY or YELLOW	 	Grey = Can Ejection, disabled by Hardware. Yellow = Can Ejection, disabled by Software.

	Name	Icon	Action / Information
			
4	Status Symbol		Seamer is turning; cans present Normal Production
			Seamer stopped, not turning.
			Seamer turning; no cans present.
			Can recently rejected. Visible until 8 good cans have been produced on the head from which the Can was rejected.
			INTEGRA is activating the can stop. Visible permanently whilst the monitor activates the Can Stop.
			Error. Normally results from lack of head number synchronisation due to sensor problem And with the reject synchronisation. Also for software problems.
5	White Clock		Current Time and date while the line is in production.
6	Blue Clock		Time and date of last defect detected and ejected from the line.
7	Squares.		Each square represents one seaming head Head 1 is on the left. Green indicates 'No problems' with this Head.
			Statistical problems detected recently on this Head.
			Can(s) ejected recently from this Head.
8	Camera		Press to take a screen shot (Supervisor mode function)
9	All Head sample		This button allows the operator to collect a All Head sample. Once pressed a can from each head is rejected in order starting with Head 1. Recorded in event log file.
10	Current Spec		Item currently in production. <i>Pressing this button will move directly to the Specification Selection Page.</i>

	Name	Icon	Action / Information
11	Main Screen		 Icon background is Blue when screen is Selected.
12	Limits Screen		Use to check limits and individual tests.
13	Ejects Screen		Use to check failures, and perform manual can ejection.
14	Spec. Screen		Use to change product specification, and to reset the Automatic Limits.
15	Advanced Screen		Advanced monitor diagnostics and configuration