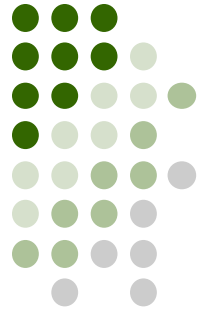


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More pigs - - Less Cost™

RQ 800 VIPER



Operator's Manual

ReproQuest®

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TABLE OF REVISIONS

REVISION	SUMMARY/DETAILS	DATE RELEASED	AUTHORS
A	Prototype Manual	September 2010	AF RF JO
B	Second Revision	December 2010	AG RF
C	<i>Additions:</i> Error Code Guide Table, Label Formats, Printer Adjustment, Cleaning Procedures, Delay Settings, Manual Motor Operation, Component Descriptions <i>Updated:</i> Maintenance section, Adjustments, Operating Procedures Screens, Recommended Cleaning Agents	February/March 2011	AG RF
D	<i>Updated: Error Reference Guide and Troubleshooting, New screen shots</i>	June 2011	RF

This manual is arranged to assist in finding the information needed for safe handling and operation of the RQ 800 VIPER. Please refer to the Table of Contents to help locate information. In the event that additional assistance is needed, please contact ReproQuest, Inc.

Foreword

Mission Statement

Our mission is to provide customers with products that deliver exceptional quality and performance at competitive prices. At ReproQuest, we maintain low overhead, streamlined manufacturing and no frills packaging and distribution to save you money. The quality and performance of products developed at ReproQuest are the result of specialized reproductive knowledge combined with years of scientific research, all working to make your business a more efficient, profitable livestock operation.

SAFETY AND SUPPORT

The following section outlines basic safety precautions to be followed when operating the RQ 800 Viper. This section will also provide additional information regarding the conditions of sale and how to contact ReproQuest for assistance.

1.1 Safety Requirements and Warnings

Due to the nature of the machine, inherent dangers are present should the machine be operated by individuals who have not been properly trained or instructed in its use. These same dangers exist should the machine be operated in manners contrary to its intended use as described in this operator's manual. To guarantee a long service life as well as the safety of all those who operate the RQ 800, please ensure that each operator is aware of instructions and procedures before initial use of the machine.

1.2 General Precautions

No unauthorized alterations and changes to the machine are permitted due to safety concerns. Any violation to these guidelines will also result in the machine warranty to be void.

Repairs and servicing may only be performed by specifically trained individuals with knowledge of the RQ 800.

Main compressed air line should be disconnected before any work on the pneumatic system is performed.

At no time during operation should an individual reach into the RQ 800's moving parts, e.g. transport belt, cutter, dispenser, sealer. Doing so could result in serious injury. Only once production has been stopped and power disconnected should any adjustments be made. If necessary activate Emergency Stop Switch.

Before cleaning or maintenance procedures are performed, ensure main power switch is OFF and locked out.

The RQ 800 requires a 120 VAC or 240 VAC power supply, as specified upon installation.

1.3 Conditions of Sale & Liability Disclaimer

REPROQUEST STANDARD TERMS AND CONDITIONS OF SALE

ReproQuest, Inc. (ReproQuest) warrants that the goods conform to ReproQuest's current published specifications. REPROQUEST INC. MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, AND BUYER ASSUMES ALL RISK OR LIABILITY RESULTING FROM USE OF SUCH GOODS. REPROQUEST'S LIABILITY FOR NONCONFORMING GOODS UNDER THE FOREGOING WARRANTY IS EXCLUSIVELY LIMITED, AT REPROQUEST'S OPTION, TO THE GOODS' PURCHASE PRICE OR REPLACEMENT OF THE GOODS. REPROQUEST'S TOTAL LIABILITY, INCLUDING BUT NOT LIMITED TO LIABILITY ARISING OUT OF, RESULTING FROM, OR IN ANY WAY RELATED TO, CONTRACT, TORT, BREACH OF WARRANTY, INFRINGEMENT, OR OTHERWISE, SHALL NOT IN ANY EVENT EXCEED THE PURCHASE PRICE OF THE GOODS THAT ARE THE SUBJECT OF THE CLAIM. UNDER NO CIRCUMSTANCES SHALL REPROQUEST BE LIABLE FOR LOSS OF PROFITS, DATA, OR INFORMATION OF ANY KIND, REVENUE OR INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES AND EVEN IF ANY REMEDY SET FORTH HEREUNDER IS FOUND TO HAVE FAILED OF ITS ESSENTIAL PURPOSE. Buyer waives all claims for shortage or reasonably discoverable defect unless made in writing within 30 days after receiving the goods. Buyer waives all other claims unless made in writing within 30 days after learning the basis of the claim, or 120 days after receiving the goods, whichever occurs first. Except to the extent resulting from ReproQuest's negligence, Buyer shall indemnify, defend and hold ReproQuest harmless from and against any claim, demand, action, penalty or liability (including reasonable costs and attorneys' fees) that ReproQuest incurs or becomes responsible for arising out of Buyer's handling, use or resale of the goods after the goods are delivered to the F.O.B. point. Buyer shall

handle, use and dispose of the goods as necessary for the safety and protection of persons, property and environment, and in accordance with ReproQuest recommendations and applicable governmental laws and regulations. Buyer shall deliver the most recent product literature to its customers and maintain a written record of such deliveries. Buyer shall only sell to those who, in the best judgment of Buyer, can handle, use and dispose of the goods safely. Taxes have not been included unless specifically itemized on the invoice. Buyer shall pay all taxes or other charges related to the goods. The terms of this document are not modified by any buyer purchase order or other similar writing.

1.4 Limited Warranty

ReproQuest will warranty parts and labor to repair or replace any part in the event that the RQ 800 Viper fails to perform due to manufacturing defect for up to one year from the date of purchase.

This warranty does not cover:

- Damages from improper use
- Damages incurred after shipping
- Defects other than manufacturing
- Normal use and wear
- Damage from misuse, abuse, accident, alteration, lack of proper care and maintenance or incorrect voltage/air supply
- Damage from service due to unauthorized repair
- Transportation and shipping
- Labor (after the initial one year)
- Product loss as a direct result of mechanical failure of the product or of any delay in providing service, repair or replacement

*For additional warranty information, see invoice.

1.5 How to Contact ReproQuest

ReproQuest appreciates your business and is committed to assisting you in the successful operation of your machine. It is a priority to respond to service needs quickly and efficiently. For customer service, please contact ReproQuest by calling 1 (608) 695-9270 and ask to speak to a service representative. Questions can also be sent via email at service@reproquest.com.

This manual provides information for proper operation as well as resolution of problems that may arise during the use of the equipment. A digital copy of this manual can also be found online at www.ReproQuest.com. If additional assistance is required, please do not hesitate to contact ReproQuest for more support. When calling, please ask for the service department and have the following information available:

Company name and location _____

Purchase Date _____

Model Number _____

Serial Number _____

Be prepared to describe the problem as well as what steps you have already taken during troubleshooting.

II) PRODUCT OVERVIEW

This section contains a basic description of the RQ 800 Viper and its components, along with providing a detailed description of how each operation is performed during the packaging process.

2.1 Product Information

Serial Number: See Type Plate
Production Date: See Type Plate
Voltage: 120/240VAC, 50/60 Hz, as specified on installation
Amperage: 2.2/1.1A
Supply Air: 60 PSI minimum, 90 PSI recommended



Figure 2.1.1 RQ 800 Viper System

2.2 Description of Operation

2.21 Transport Belt

Each roll of bags is positioned on the film roll platform and passed through the double rollers onto the transport belt. The fingers on the transport belt insert into the holes on the film. The belt then transports the film through each station. The belt utilizes a registration sensor to accurately position the belt in the correct location. The index also utilizes a registration sensor to detect the presence of the tip on the bag. These sensors can be disabled by the operator (see sec 4.18 on page 32.)

** The bag tip sensor may not function properly if the machine is used with third party bags. In such a case, the sensor may need to be disabled. Refer to section IV).

2.22 Cutting Station

After the bags have reached the first cutting station, an automated cutter will slice and separate each bag. After being separated, the bag will simultaneously be opened by a guide bar as it travels to the dispensing station to be filled. The

black bumpers will come together while the slide is lowering. The blade will then extend and the slide will raise. Finally, the black bumpers and the blade will retract into home position.

2.23 Dispensing Station

Once the sensor ensures that the bag is in its proper position, the needle will insert into the bag and the pump will be activated. After set volume has been reached, the needle will raise into initial position. A sensor is used to detect air in the tubing as pumping occurs, alerting the operator if air is detected. The sensor can be disabled by the operator (see sec 4.18 on page 32). Bags will then move along the transport belt into the sealing station.

2.24 Sealing and Labeling Station

In the final station each bag is sealed and labeled simultaneously. This reduces the risk of leaking during the labeling process. Once the filled bag has reached this station, a heating anvil compresses the upper region of the bag and hermetically seals the film. During sealing, a label is printed using the batch information entered into the computer. This process is fully automated and uses a pneumatic arm and vacuum to transfer each label onto the bag. The arm begins by lowering in front of the printer. The vacuum and air jet are turned on and a label is printed. Once the label has been detected, the air jet turns off and the arm retracts. After the bag is in place, the arm rotates up, turns off the vacuum and extends to apply the label on the bag. The arm then retracts and rotates back to the home position.

2.25 Discharge of Filled Bag

Once the bag is labeled and sealed, it will be discharged from the transport belt and slide down the dispensing chute into a container.

2.3 Technical Specifications

Processing Capacity: 800 - 1600 bags per hour / 13 - 27 bags per minute

Cycle Time: 2.25 - 4.5 seconds

Magazine Capacity: 750 bags per roll

Operational pressure: 60-90 PSI

Max operational pressure: 120 PSI

Electric Supply: 120/240 VAC

Required air compressor: 30+ gallons, 5+ cfm

Ambient Temperature: Below 80° F

III) INSTALLATION AND INITIAL SET-UP

A trained ReproQuest technician will be on hand to perform installation and initial set-up procedures to ensure that proper operation can begin immediately upon receipt of machine, as well as continue throughout the duration of use.

Once installation is complete, training will be performed for those who will be operating the machine. This manual serves as an additional reference of operating procedures, and outlines how to obtain further service from ReproQuest if necessary.

Before production can begin, several set-up procedures must take place for the various machine components. Please refer to this section during production as well as in the case that troubleshooting and adjustment may be necessary.

3.1 Powering On and Off

To begin production, turn on the RQ 800 Viper using the main power switch (Figure 3.1.1) located on the left side of the machine enclosure. Switch will be in 'OFF' position, grip handle and rotate 90° clockwise.

To turn off the machine, go to the 'Feature' screen and click 'SHUT DOWN'. Once the transport belt is empty and returned to home state, the switch can be turned to 'OFF' position.



Figure 3.1.1 Power Disconnect Switch

3.2 Emergency Stop

In the event of an emergency, activate the switch on the operator interface. To engage the switch (**Error! Reference source not found.**), push the button in. To reset the emergency stop, turn clockwise one-quarter turn and button will extend back to original position.

Once the emergency switch has been activated, the machine must be restarted before resuming normal operation. Ensure safety issues have been remedied and any necessary maintenance has been done on the machine. To restart, turn the main power switch to 'OFF' position, reset emergency stop switch, wait approximately ten seconds and turn main power switch back to 'ON' position.

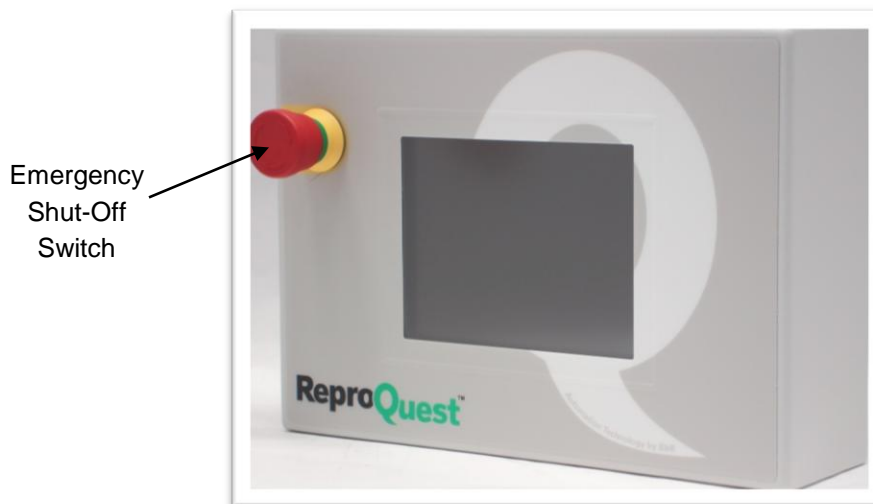


Figure 3.2.1 Operator Interface

3.3 Digital Pressure Switch

There are two digital pressure switches installed on the RQ 800 (Figure 3.3.1). They are used to monitor the pressure status of the various pneumatic components on the machine. The sensor on the left monitors the system pressure, and the sensor on the right monitors the vacuum level of the label arm. The tables below provide a description of the proper settings as well as a troubleshooting guide.



Figure 3.3.1 Pressure Switches

Table 3.3.1 Recommended Set Values

	Pressure	Vacuum
SP	75	75
HY	5	0
	NO	NC

Table 3.3.2 System Pressure Sensor Settings

<i>Setting</i>	<i>Display</i>	<i>Description/Instructions</i>
Unit	PSI	Select pressure unit based on range and conversion factors
Response Time	25	Set time between the switch's reading of the applied pressure value and how quickly the output responds to that change.
Display Code	G-ON	When output state is "on" display is green

** Sensor display will be green when pressure is adequate

Table 3.3.3 Vacuum Sensor Settings

<i>Setting</i>	<i>Display</i>	<i>Description/Instructions</i>
Unit	Pa	Select pressure unit based on range and conversion factors
Response Time	0	Set time between the switch's reading of the applied pressure value and how quickly the output responds to that change.
Display Code	G-ON	When output state is "on" display is green

** Sensor display will be green when label is present on vacuum pad of label arm

INSTALLATION AND INITIAL SET-UP

Table 3.3.4 Pressure Sensor Error Codes

Error	Display	Problem	Troubleshooting
Over Current Error	Er21	Current flow is more than 125 mA	Turn power off, remove output factor for the over current, turn power back on
Residual Pressure Error	Er40	Pressure applied during zero-point adjustment	Remove pressure supply and repeat adjustment
Applied Pressure Error	1.000, 10.00, - 1.000, 0.00	Desired setting exceeds limitations of switch	Reset applied pressure to within set range
System Error	Er01	Internal data error, internal system error	Turn power on and off again, if reset fails contact ReproQuest for assistance.

3.31 Setting Desired Pressure

Momentarily press the 'EDIT' button and 'Out.AL' will display. Press "EDIT" twice, "SP" will display. Use arrows to adjust according to desired setting. When finished press 'EDIT' again to continue. HY will then display, use arrows to adjust. When set values have been entered, press 'EDIT' twice to return to sensing mode. User may also wait 10 seconds to automatically return to sensing mode.

3.4 Film Sensors

The RQ 800 utilizes three miniature photoelectric sensors (Figure 3.4.1) to detect the film.

The first film present sensor (green in Figure 3.4.1) will detect the presence of the bag on the transport belt in cutting position.

The film position (red in Figure 3.4.1) detects the absence of film (the hole punched in top of film) to ensure proper alignment before filling.

The second film present sensor (blue in Figure 3.4.1) will ensure that the bag is present at the fill station before and during the pumping process.

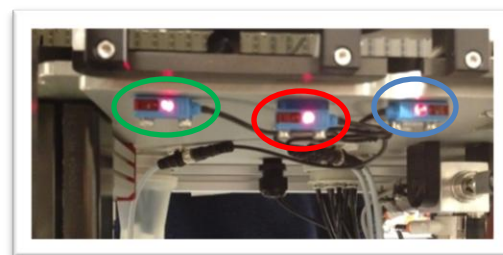


Figure 3.4.1 Photoelectric Sensors

***In the case that a problem arises with a sensor, please refer to the troubleshooting guide and/or maintenance section for assistance.*

3.5 Alarm Tower

The RQ 800 has a three-color LED visual tower to assist in production. Alarm will display a flashing light according to status. There is also an audible buzzer. This buzzer can be enabled/disabled in 'SYSTEM SETTINGS'.

Table 3.5.1 Signal Light Description

Display	Buzzer	Indication
Green Solid	None	Ready to process
Yellow Flashing	None	Not ready to process, refer to troubleshooting
Red Flashing	Once	Error occurred, refer to troubleshooting guide.
Green Flashing	None	Processing
Green Solid, Yellow Solid	None	Processing, waiting for user input
Green Solid, Yellow Flashing	None	Processing, but warning present



Figure 3.5.1 Light Tower

INSTALLATION AND INITIAL SET-UP

3.6 Pump

The RQ 800 is equipped with a three-roller, peristaltic pump system to transfer fluid from the container to package. The pump-head is capable of a maximum speed of 600 rpm and a flow rate of up to 3000 ml/min. It uses silicone tubing, with 8.0 mm bore.

- To load tubing, open the track door, gripping the pump at the arrow (Figure 3.6.3 PumpheadFigure 3.6.3), located on the top front, and pulling upward.
- **Dials on left and right sides (Figure 3.6.1) should be adjusted to 8.0 mm.**
- With the filling needle firmly attached to one end of the tubing (using clamps if necessary) place needle into the red holding guide on the front of the machine and through the guide hole (see Figure 3.6.2).
- Thread the tubing through each guide, and into pump.
- To load the tubing into the pump, place into the open pump door. Hold tubing at slight downward angle (see Figure 3.6.4) while creating a small loop in tubing across the rollers. Close the pump door - it should click into place.
- Place the open end of the tubing into the container.



Figure 3.6.1 Dial Setting

Arrow

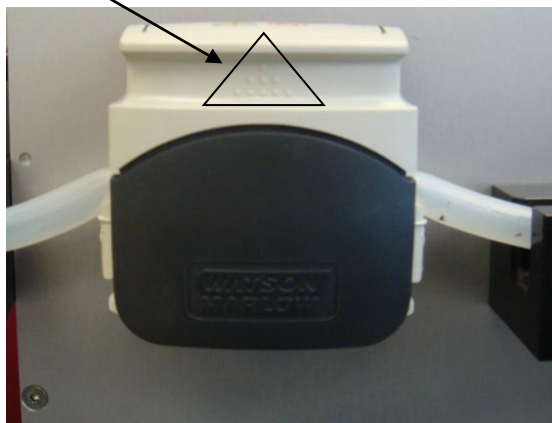


Figure 3.6.3 Pumphead



Figure 3.6.2 Needle Position



Figure 3.6.4 Loaded Tubing in Pump

3.7 Printer

The RQ 800 is equipped with a *Zebra GX420D* thermal printer (see Figure 3.7.1 and Figure 3.7.2) for use in the automated labeling of each bag. Below are diagrams of the basic parts and functions referenced in the use of the printer. The label formats are preloaded on the printer upon installation. If a logo is desired, the image must be loaded onto the printer prior to installation. Contact ReproQuest for assistance.

***For more information, refer to the troubleshooting guide in the final section of the manual*

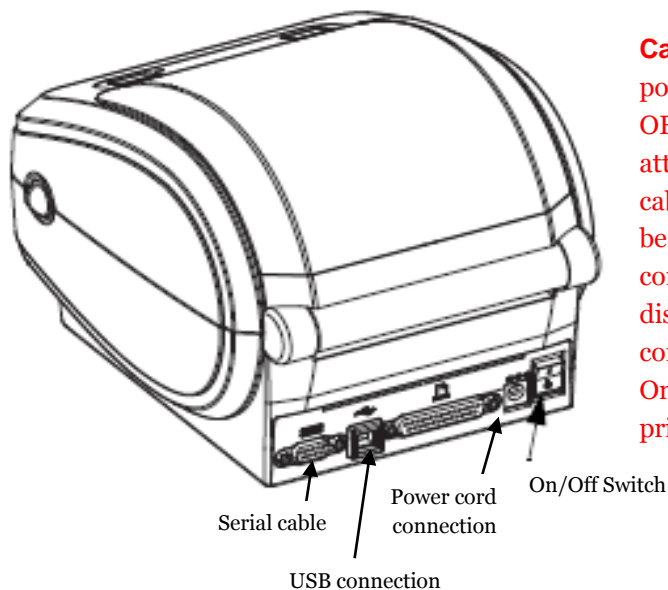


Figure 3.7.1 Rear of Printer

Caution ** Keep the power switch in the OFF position when attaching the interface cable. Power cord must be inserted before connecting or disconnecting communication cable. Once connected, printer will power on each time machine is turned on.

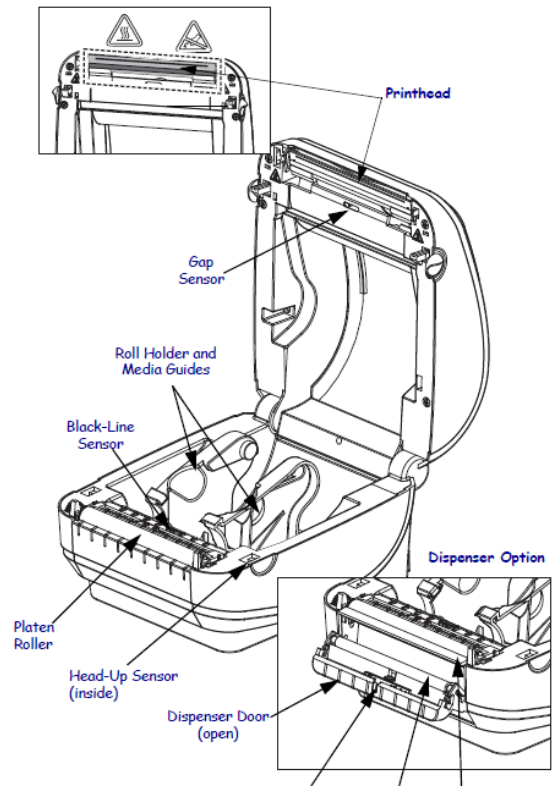


Figure 3.7.2 Front of Printer

INSTALLATION AND INITIAL SET-UP

Table 3.7.1 Printer LED Error Codes

LED Color	Printer Status	Troubleshooting
Off	Off	Check that printer switch is on and power cord is in place and plugged into power supply
Solid Amber	Paused, loading	Light should turn green within 10 seconds, if not printer may need to be restarted or allowed to cool momentarily due to overheating
Solid Green	Normal operation	No action necessary
Flashing Red	Paused	Media is out, re-load labels, press feed button to resume printing Top cover may not be securely closed, press down to ensure it is locked in place
Flashing Green	Normal operation	Printer is receiving data
Flashing Amber	Paused	Printer is overheated, turn off and allow to cool for five minutes before powering on
Alternatively Red and Green Flashing	Needs service	Contact ReproQuest for further assistance regarding servicing

3.71 Powering On

- 1) Press the power switch located on the back of the printer, up to turn on, and press down to turn off. Once power is on, status light will illuminate amber.
- 2) When the status light is green, printer is ready to begin labeling.
- 3) Ensure that both black power supply cord and gray communication cables are connected in order to sync the controls with the system.

3.72 Loading Labels

- 1) Loosen thumbscrew below printer and slide backwards and up to release it from the mounting.



Figure 3.7.3 Opening Printer

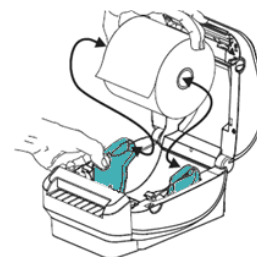


Figure 3.7.4 Loading Labels

- 2) Open the printer by simultaneously pulling the release latches on right and left sides forward and lifting the top cover (Figure 3.7.3).

- 3) *Adjust the label guides by turning green dial located inside printer. Each guide should be closely fitted to the label width, without causing excess friction.*
- 4) *Retract the media guides and place the media roll on the roll holder, release the guides to secure. Ensure that the labels exit the roll on the bottom and are facing upwards. Pull end of roll out so that labels exit the front of the printer.*
- 5) *Close the lid and snap into place.*
- 6) *Press feed button (Figure 3.7.9) to feed one blank label.*



Figure 3.7.5 Closing Printer

3.7.3 Label Dispenser Mode

This feature enables the machine to automatically attach individual labels to each bag as it is cut, filled and sealed. To complete the label loading process, the media must be fed through the dispenser.

- 1) Press the feed button. Once several inches of media have exited the printer, remove the labels and lift the sheet (Figure 3.7.6).

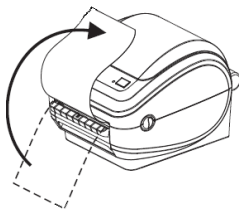


Figure 3.7.6 Lift the label backing.

- 2) Open the dispenser door, located on front of the printer, by folding down.

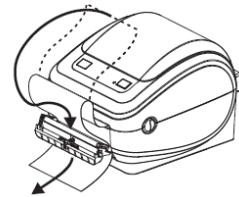


Figure 3.7.7 Insert backing behind dispenser door.

- 3) Insert the label sheet between the dispenser door and the printer body (Figure 3.7.7).

INSTALLATION AND INITIAL SET-UP

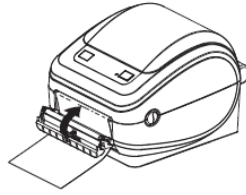


Figure 3.7.8 Close dispenser door.

- 4) Close the dispenser door (Figure 3.7.8).

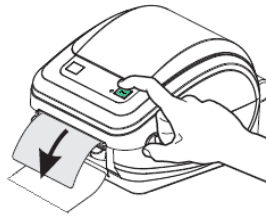


Figure 3.7.9 Printer Feed Button

- 5) Press the feed button (Figure 3.7.9) to advance the media and confirm label and backing are separating correctly. Thread excess backing paper into the slot located below the dispenser door. This will direct waste paper away from working parts of the machine to maintain smooth operation.

3.74 Printer Adjustments

****NOTE: ANY TIME THE PRINTER LID IS OPENED, IT IS NECESSARY TO PRESS THE FEED BUTTON TO FEED ONE BLANK LABEL AND RESUME OPERATION**

Calibrating Media Sensor

If the labels are dispensing inconsistently, or more than one at a time, it may be necessary to calibrate the media sensor. To do this, hold feed button (Figure 3.7.9) until two green flashes, then release.

Reset to factory settings

To reset back to factory default settings, hold feed button (Figure 3.7.9), wait for four green flashes, then release.

Enter Dump Mode

If the printer will not print, it may be necessary to verify that the printer is communicating with the CPU. To do this, you must enter dump mode.

To enter dump mode, turn printer off. Hold feed button (Figure 3.7.9) while powering on and release when light flashes green. This will cause printer to print all communications exactly as received.

Entering dump mode will allow user to verify every character that is sent to the printer. Every five seconds, the printer should receive a "13" from the machine. During operation, the printer should receive a string of text from the machine for every label it is to print.

3.75 Label Formats

There are several label formats that may be selected. All formats come preloaded on the printer. A default logo is also provided. To load additional logos, contact ReproQuest. In the event that the printer memory is damaged, the default format and custom label formats one through four may be downloaded from the machine. This also sets the clock on the printer. To select a label format, logo or to download formats to the printer, please refer to Section 4.20. See below for examples of different variations. If a new format is desired, please contact ReproQuest for assistance in designing your preferred format.

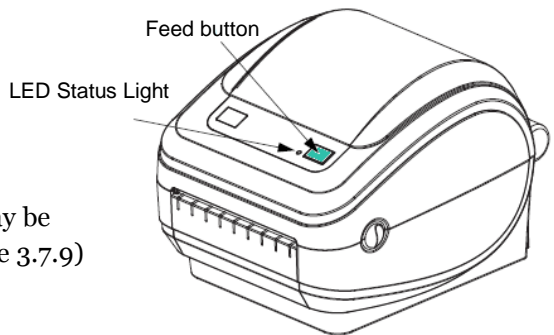
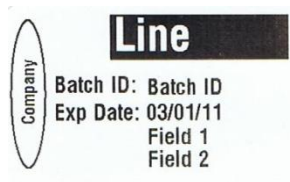


Figure 3.7.10 Printer Controls



Default



Custom 1



Custom 2: Spanish

INSTALLATION AND INTIAL SET-UP

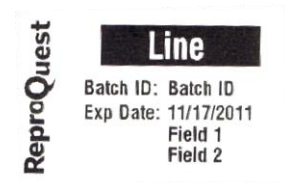
Label Formats (cont.)



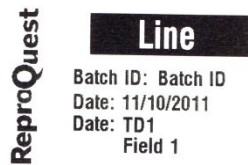
Custom 3: German



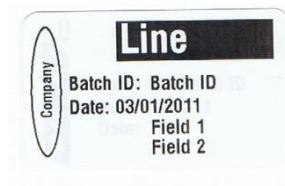
Custom 4: French



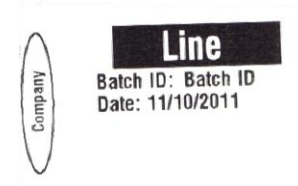
Custom 5



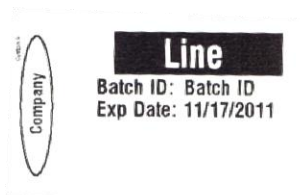
Custom 6



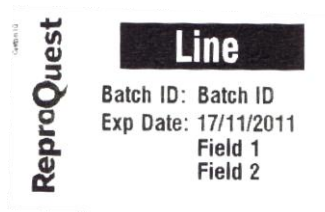
Custom 7



Custom 8



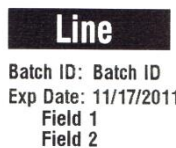
Custom 9



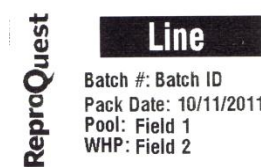
Custom 10



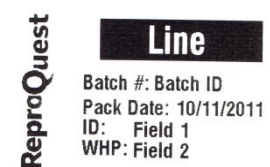
Custom 11: Dutch



Custom 12



Custom 13



Custom 14

Once installation is complete, production can begin. After power has been turned on, the machine will boot for approximately 30 seconds. Following the boot sequence, the image of the machine will be displayed on the screen. Touch screen to begin.

The RQ 800 is equipped with a specifically designed operator interface. This system can be operated both on site from the machine, as well as remotely through Ethernet connection. The following section contains descriptions of the production screens, as well as instructions of how to operate the machine throughout the packaging process.

4.1 Utilities Screen

The first screen is a utilities set-up screen (Figure 4.1.1). Prior to beginning production, enter or adjust settings as necessary. If no adjustment is needed, press 'FORWARD' arrow to continue.

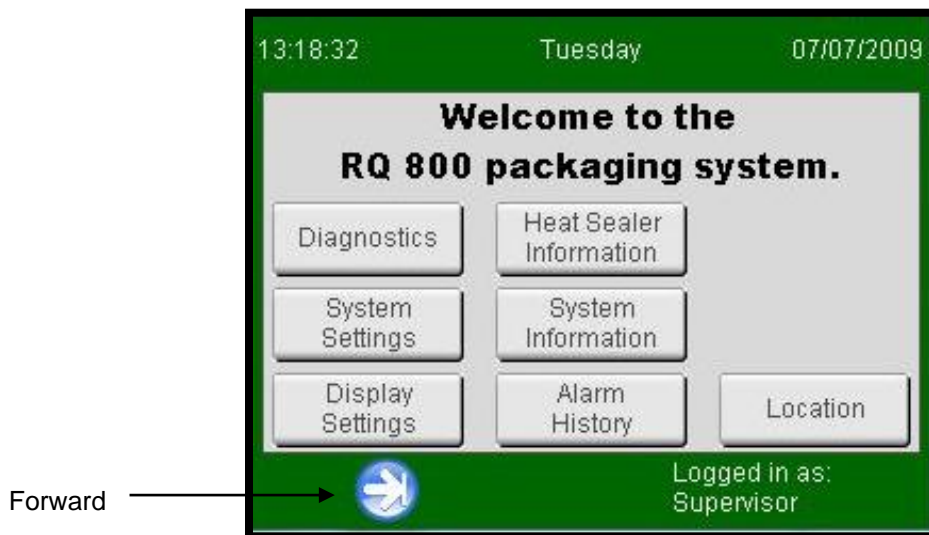


Figure 4.1.1 Utilities Screen

Diagnostics: Opens screen to test the inputs and outputs.

System Settings: Operating settings. These settings include delay settings and label format. ****Must LOG-IN to access**

Display Settings: Select language/units. Calibrate touchscreen.

Heat Sealer Information: Displays diagnostic information regarding heat sealer.

System Information: Hardware status information and setting of date and time. ****Must LOG-IN to access**

Alarm History: Displays history of alarms and errors.

Location: Display and enter location information, such as Name and Contact Information.

OPERATING PROCEDURES

4.2 Feature Screen

After set-up has been completed, user will continue to the main feature screen (Figure 4.2.1). At this point ensure desired functions are enabled, and correct settings are inputted for fill and weld. Once ready to continue, hit 'FORWARD' arrow.

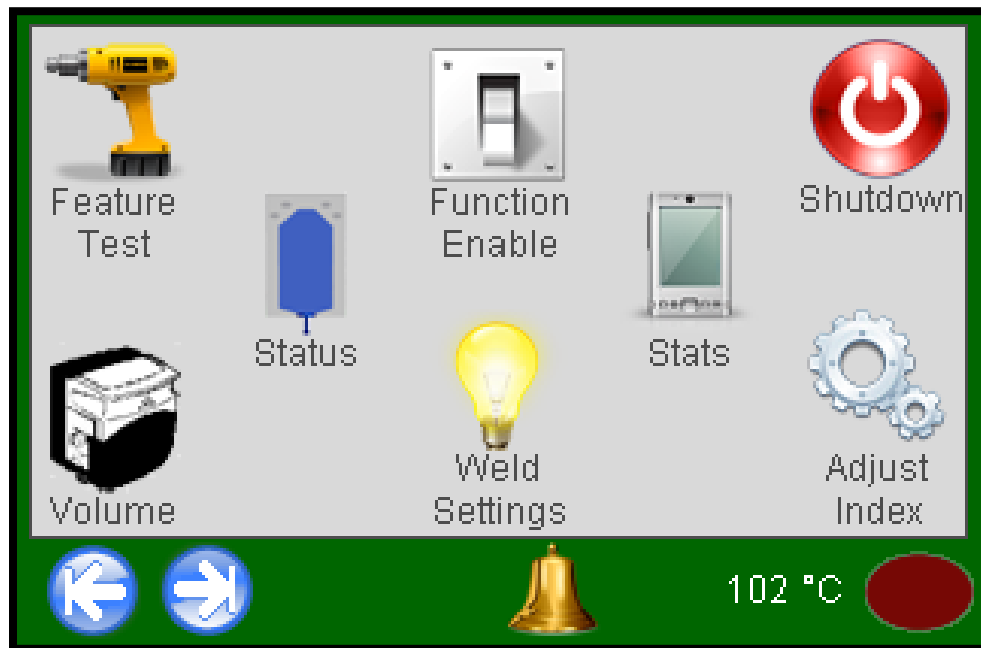


Figure 4.2.1 Feature Screen

Feature Test: Allows user to test each station.

Function Enable: Allows user to enable/disable stations. Also controls rinse feature.

Shutdown: Press to shut-down machine.

Volume: Set-up and/or calibrate fill volume.

Weld Settings: Access and adjust sealer settings.


Adjust Index: Allows user to adjust transport belt.

Status: Displays current information pertaining to machine status.

Stats: Displays lifetime production statistics.

4.3 Batch Information Screen

To continue, user will be prompted to enter batch information (Figure 4.3.1).



The screenshot shows a 'Batch Setup Screen' with a green background. At the top, it displays the time '13:24:23', the day 'Tuesday', and the date '07/07/2009'. The main area contains several input fields and buttons. On the left, the word 'BATCH' is written vertically. The input fields are: 'Quantity:' with '261', 'Line:' with 'Line X', 'Batch Identification:' with 'RQ123456', 'Field1' with 'Preserv Xtra', 'Field2:' with 'RQ', and 'Date Offset:' with '7'. To the right of these fields is the word 'INFO' written vertically. Further right are two buttons: 'Test Label' and 'Batch Label'. Below these is a large green circular button with a white figure running and a red checkmark, which is pointed to by an arrow labeled 'Run'. At the bottom, there is a navigation bar with icons for back, printer, magnifying glass, and a temperature display showing '175 °C'.

Figure 4.3.1 Batch Setup Screen

Click on each dialog box to input batch information.

Expiration date will automatically be calculated based on number of days entered. For example, this screen shows seven, therefore label will display an expiration date of one week from date of production.

Press 'Test Label' to print a sample label or 'Batch Label' to print a label containing a bar code of each field.

When ready, press 'RUN' button and packaging will begin.

OPERATING PROCEDURES

4.4 Load Film Screen

In the event that the film is empty, or when beginning production, screen will prompt user to load film. Enter the number of bags in the roll, then press 'RESET' button, to reset number of bags. If reset button is not pressed, computer will load value in field once 'LOAD FILM' is pressed.

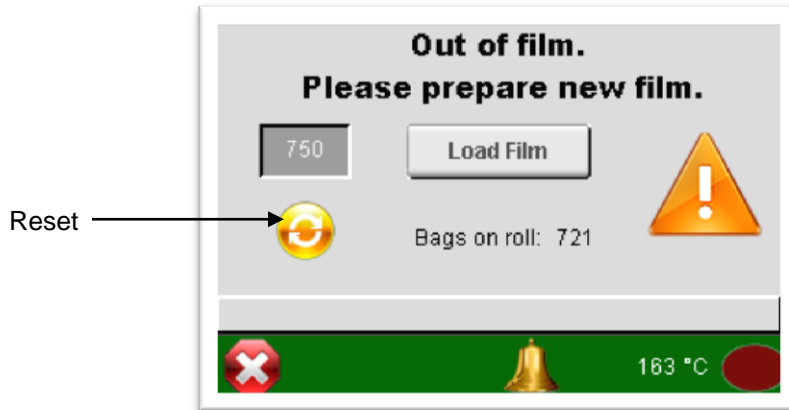


Figure 4.4.1 Load New Film Screen

To begin loading, ensure the transport belt fingers are aligned to the sealing station block. Fingers are curved towards each other, in pairs, as shown in (see Figure 4.4.2). In order for transport belt to be aligned prior to loading film, it is necessary for the two curved fingers to be aligned with either side of the sealing station block, as seen in Figure 4.4.4 and Figure 4.4.3.



Figure 4.4.2 Pair of Fingers

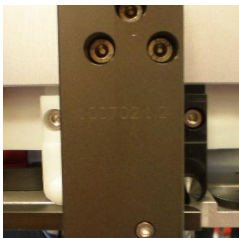


Figure 4.4.3 Sealing Block

Proper alignment ←

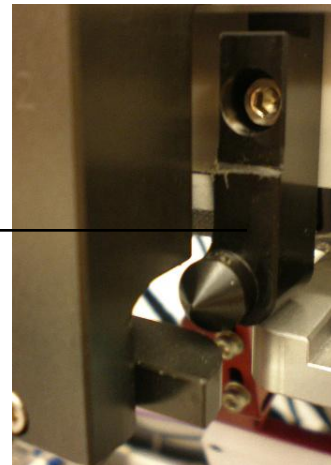


Figure 4.4.4 Fingers Behind Sealer

Once fingers are in the correct position, new film can be loaded. Manually separate top of film, and thread onto guide bar. Position first hole onto first black finger of transport belt, and press 'LOAD FILM'. Screen will display 'LOADING', and transport belt will begin to move. Continue holding film until second hole has aligned onto transport belt. The film will then move into place and processing will begin.

***See troubleshooting guide for assistance with any alarms or errors that may occur during film loading process*

4.5 Adjust Carrier Screen

In the case that any adjustments need to be made prior to beginning production, go to the 'ADJUST INDEX' screen (Figure 4.5.1), and adjust carrier forwards or backwards. The center 'POWER' button enables the transport belt. In the case that the transport belt is not moving, user should ensure that power is on. If the belt needs to be manually adjusted, turn power off and manually move carrier. Ensure power is on before resuming any further actions. Figure 4.5.2 shows the motor powered off.

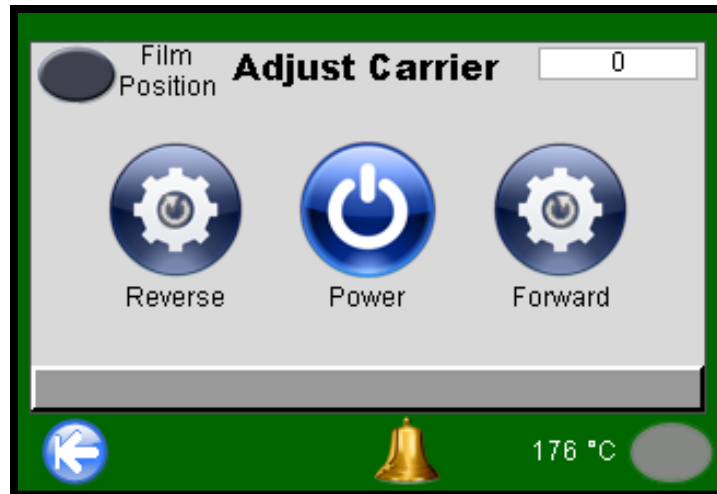


Figure 4.5.1 Adjust Carrier

***For further instruction on film placement and adjustment, see Maintenance section.*

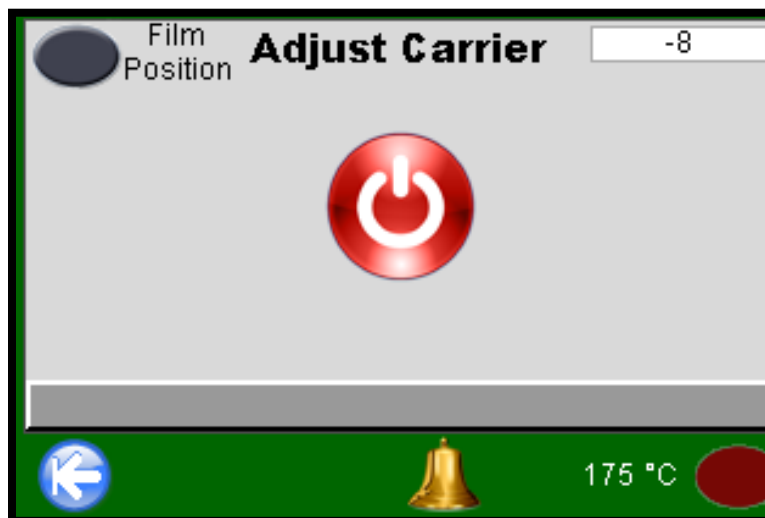


Figure 4.5.2 Index Motor Not Powered On

4.6 Prime Pump Screen

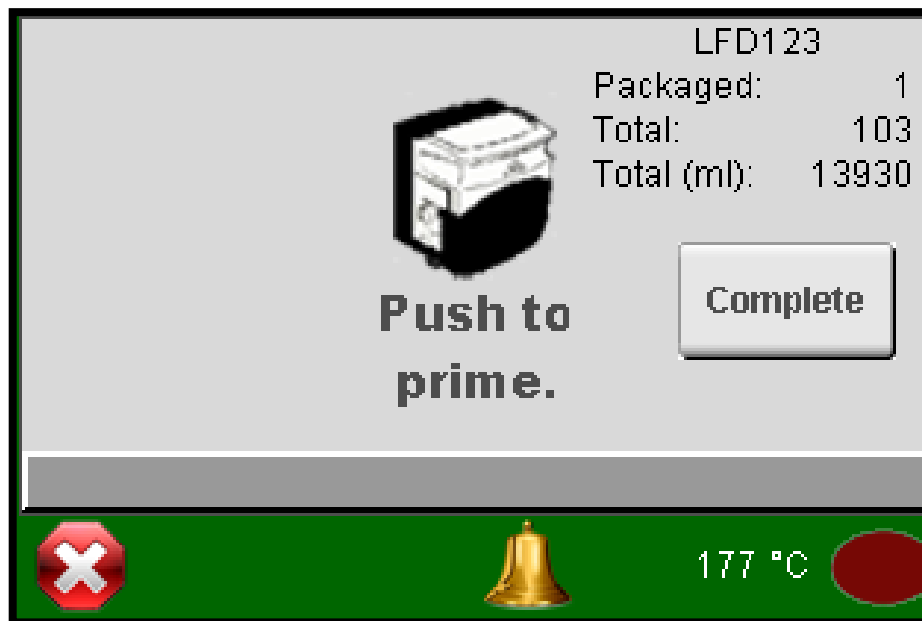


Figure 4.6.1 Pump Prime Screen

After film has been loaded, processing will begin automatically. Following the first dose, user will be prompted to prime pump. Priming ensures that the tubing is void of all air pockets which is vital to ensuring accurate dose volume. Press and hold the image of the pump to manually run the pump until all of the air is out of the tubing.

*****Note: DO NOT repeatedly press the pump button.***

If more priming is necessary, wait until the pump has stopped before re-pressing pump button. Once prime is complete, press 'COMPLETE' and packaging will continue.

4.7 Production Screen

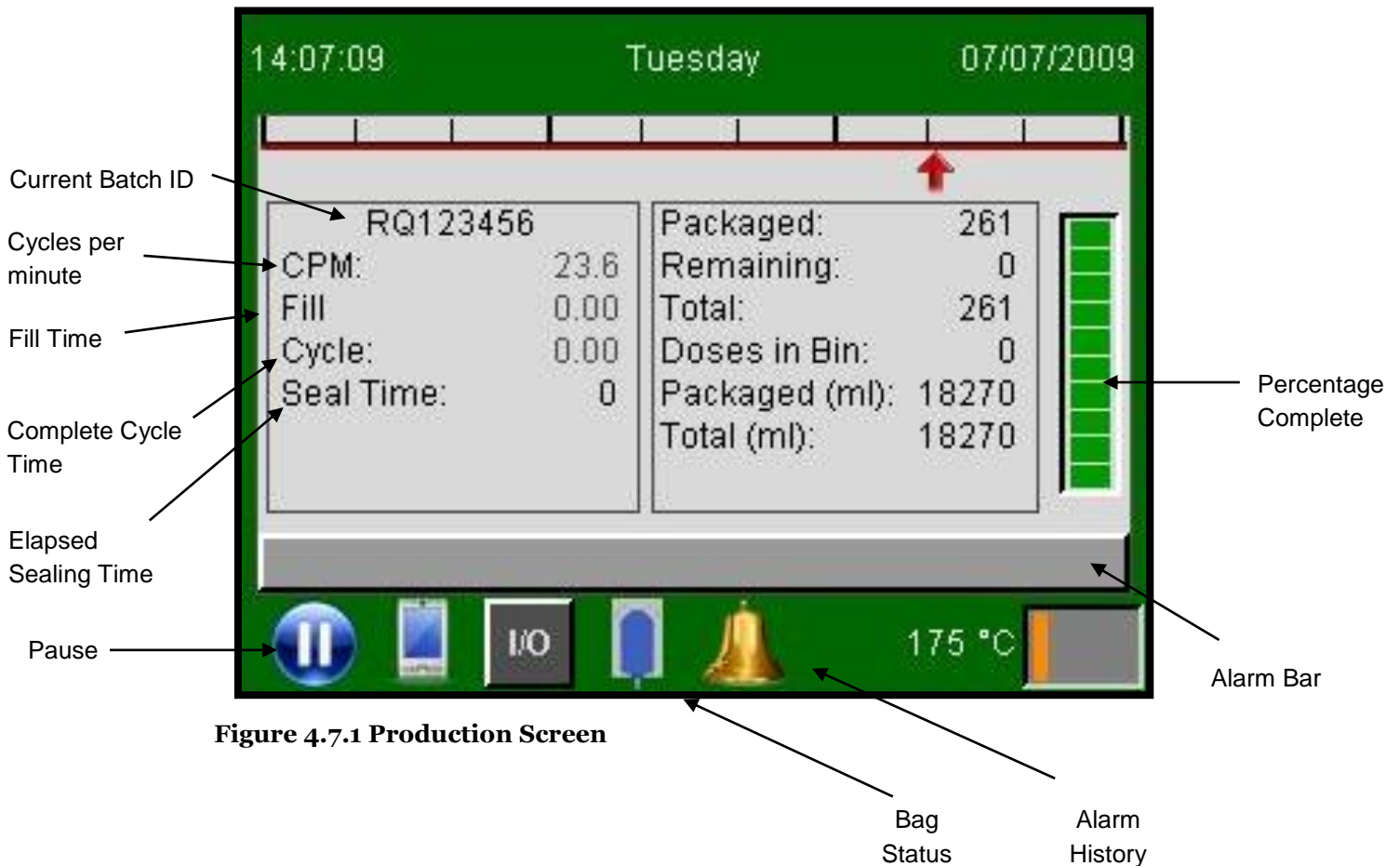


Figure 4.7.1 Production Screen

Figure 4.7.1 is seen throughout production, and displays current packaging statistics. If during packaging production needs to be stopped, press 'PAUSE' button.

User will be prompted with the pause screen. From here any necessary adjustments can be made to components.

If an error occurs, it will be displayed towards the bottom of the screen in the 'ALARM BAR'. Errors can be acknowledged by touching the bar. Alternately, the 'ALARM HISTORY' will show a list of all active alarms.

OPERATING PROCEDURES

4.8 Pause Screen

If production is paused, the screen displays Figure 4.8.1. The 'PAUSE' screen gives the user options to adjust the operation of the machine or to cancel the batch.



Figure 4.8.1 Pause Screen

Volume: Adjust fill volume and calibrate pump.

Weld: Adjust weld time and/or temperature.

Function Enable: Enable/disable features.

Adjust Index: Power on/off, adjust transport belt. Only effective for current dose unless index registration sensor is disabled.

Label: Allows user to print extra labels as needed.

Cut: Performs cut function.

*****ERRORS WILL NOT CLEAR WHILE PAUSED. THE ERRORS MAY BE ACKNOWLEDGED, BUT THEY WILL NOT CLEAR UNTIL MACHINE OPERATION IS RESUMED. REFER TO SECTION 4.15 ERROR HANDLING ON PAGE 29***

4.9 New Batch Screen

When a dose containing a different batch identification is about to exit, user will be prompted to verify. To resume production, touch 'CONFIRM' (Figure 4.9.1).

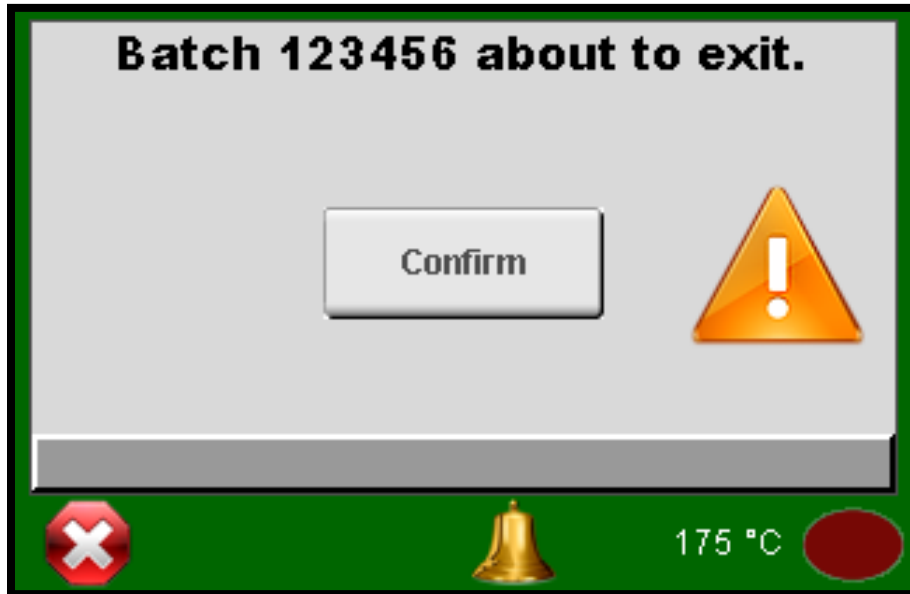


Figure 4.9.1 Confirm New Batch

4.10 Fill Volume Screen

After several bags have been dispensed, it is important to check weight and calibrate fill volume. To do this, press 'VOLUME' on 'FEATURE' or 'PAUSE' screen to bring up 'VOLUME SETTINGS' (Figure 4.10.1).

The desired fill volume is pre-set. Calibration will then be used to offset fill volume if bags are too light or too heavy.

Touch the dialog box to enter the offset value. If bag is too heavy, first press '+/-' button to input negative amount in milliliters to offset. If bag is too light, input positive amount in milliliters to offset. Press the 'CALIBRATE' button to enter.

****Only calibration of up to ± 9.9 milliliters can be achieved each time dialog box is pressed. Once calibration has been performed, offset will reset to zero. To calibrate more than ± 9.9 milliliters, first press dialog box and input maximum offset. Press 'CALIBRATE' button, and dialog box will return to zero. User can then input additional offset amount and press calibrate.**

Once desired calibration has been achieved, press 'BACK' button to return to previous screen. Packaging will then continue. To verify proper fill volume, re-weigh next bag (filled with calibrated volume) once it has been dispensed.

****FILL VOLUME WILL NOT BE ADJUSTED UNLESS THE CALIBRATE BUTTON IS PRESSED AND THE CALIBRATION COEFFICIENT RETURNS TO 0.0**

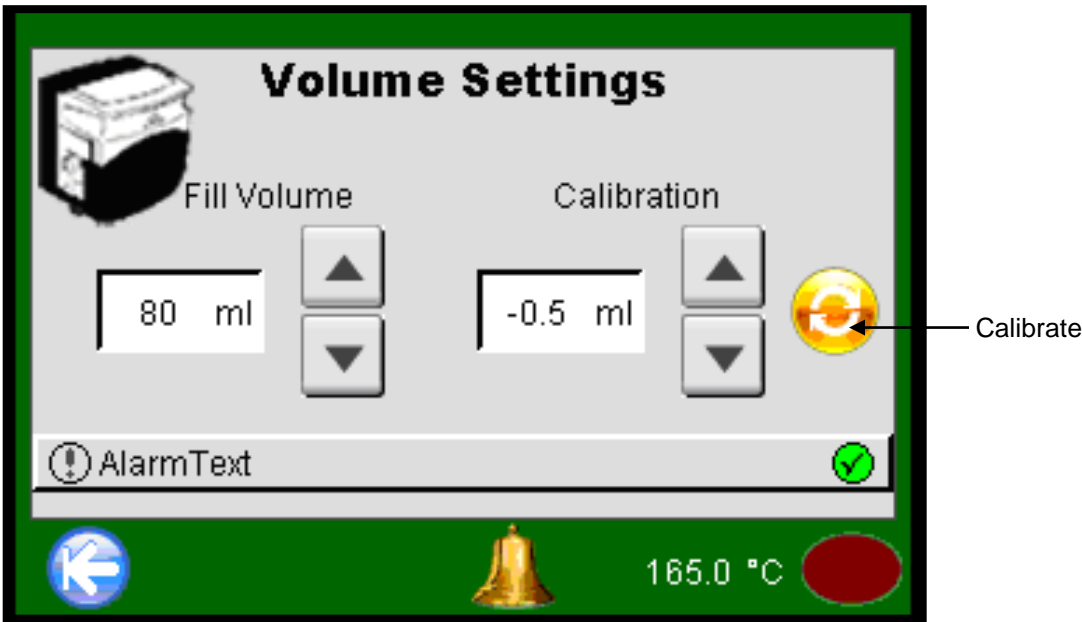


Figure 4.10.1 Volume Settings

4.11 Processing Complete Screen

Once the machine has processed the requested number of doses, user will be prompted to package any additional doses that may be necessary (Figure 4.11.1 More Doses).

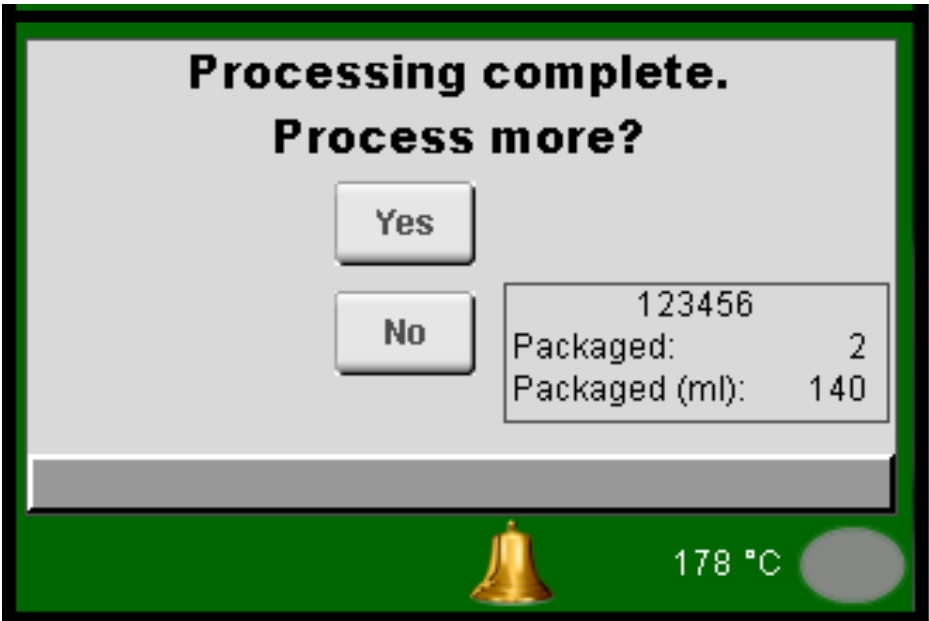


Figure 4.11.1 More Doses

Press ‘YES’, if more is desired, then enter the estimated number of doses that remain to be packaged.
Press ‘NO’ to end batch.

4.12 Rinse Screen

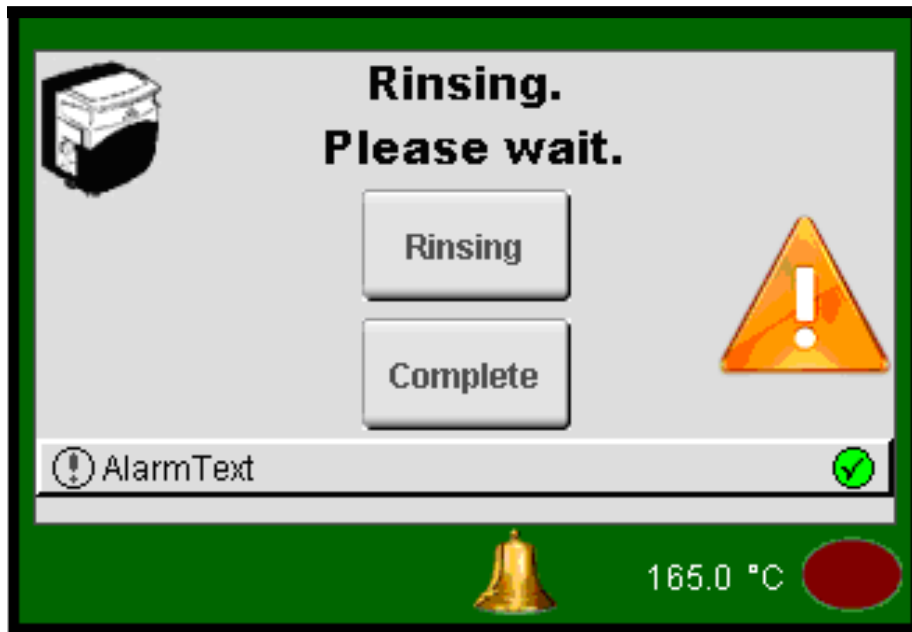


Figure 4.12.1 Rinse Screen

Between each batch, the tubing and dispensing needle may be replaced or cleaned, depending upon user specific requirements. In the 'FEATURE' screen, there is a rinse option. This option allows the user to rinse the tubing without removing from the pump after the batch is complete.

To rinse and use the tubing currently inserted in machine, place a pail of distilled water onto the pail platform and insert the tubing into the pail.

To begin, press 'RINSE'. Transport belt will advance one bag, needle will lower and pump will begin. When pump is complete, user can repeat rinse, or press 'COMPLETE' to finish.

Once rinse process is complete, water-filled bags can be discarded.

Production can then resume for the next batch.

****NOTE: THE RINSE FEATURE CANNOT ENSURE THAT THERE IS ABSOLUTELY NO CROSS-CONTAMINATION BETWEEN BATCHES. IT ONLY GREATLY REDUCES THE CHANCE OF OCCURRENCE.**

4.13 Function Enable Screen

This screen is used to shut off specific machine functions for diagnostic or user customization purposes. It will allow user to enable/disable components of the RQ 800 before packaging.

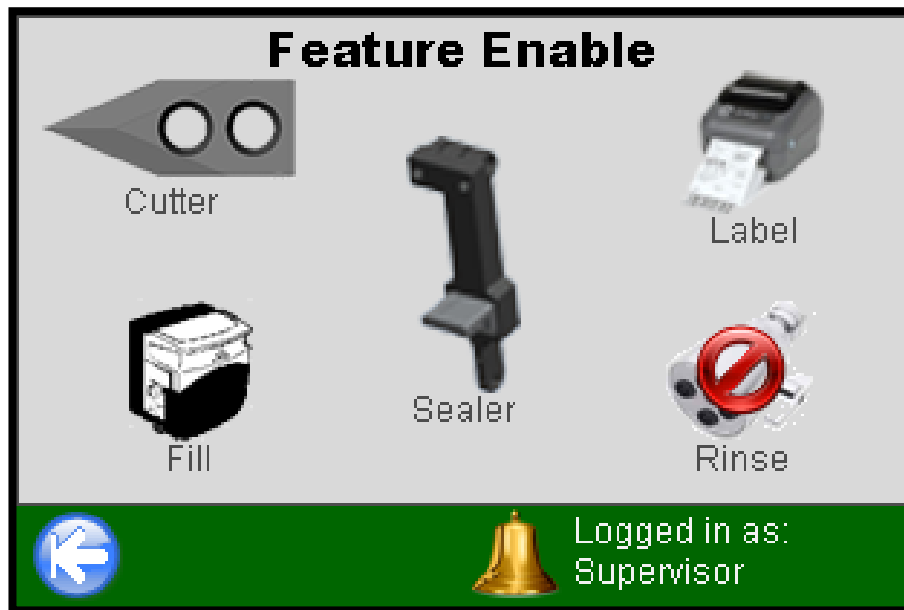



Figure 4.13.1 Feature Enable

Press any of the corresponding features to enable or disable.

For production, cutter, fill, sealer, and label should all be on. This is indicated by removal of the  symbol.

Rinse can also be enabled, and will be used to clean tubing if desired.

4.14 Weld Settings Screen

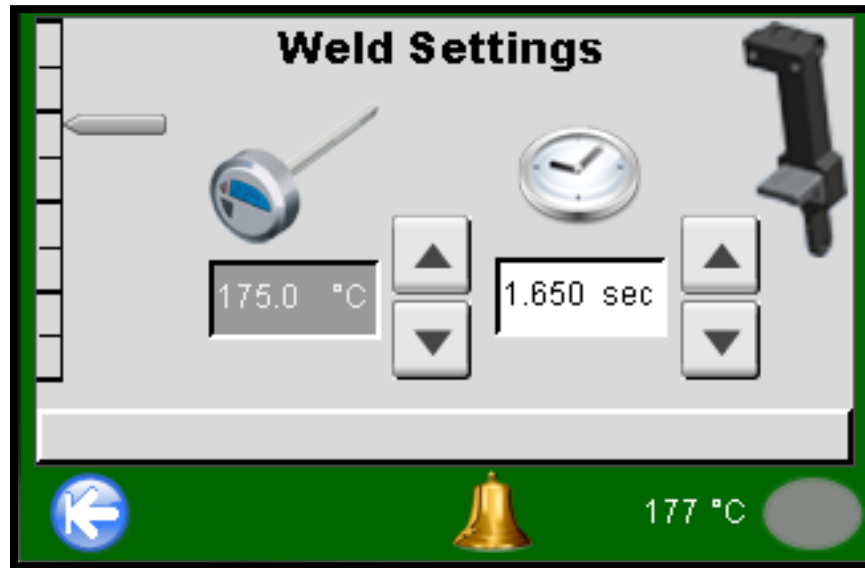


Figure 4.14.1 Weld Settings

This screen allows user to adjust set temperature of heating anvils and sealing time. To do this, touch dialog box and enter set value (Figure 4.14.1).

Table 4.14.1 shows the recommended weld settings. Refer to troubleshooting for more help with sealing issues.

Figure 4.14.2 shows a close-up view of the heat sealer. It is located underneath the main frame adjacent to the heat sealing block and is retracted when not in use. Sensor will monitor current weld temperature, which is displayed on the bottom of each screen next to the orange/gray bar.

Table 4.14.1 Recommended Weld Settings

Weld Temperature	185 °C
Weld time	2.000 seconds

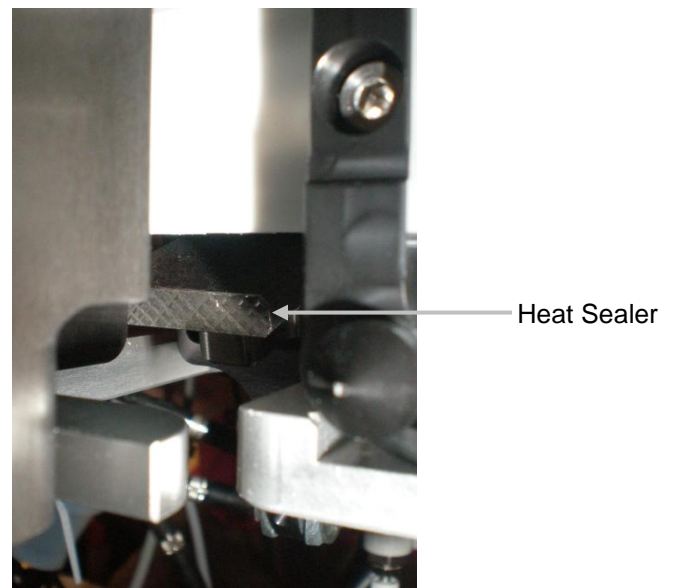


Figure 4.14.2 Sealing Anvil

OPERATING PROCEDURES

4.15 Error Handling

Errors serve to indicate to the operator if any of the machine functions are not operating correctly. Anytime an error occurs, the first step is to determine the cause. Once the cause of the error has been remedied, the error can be cleared.

Most errors will occur during production. Figure 4.15.1 shows an error that has occurred during production. If 'PAUSE' is pressed and an error occurs during the pause sequence, the error will display on the pause screen (Figure 4.15.2).

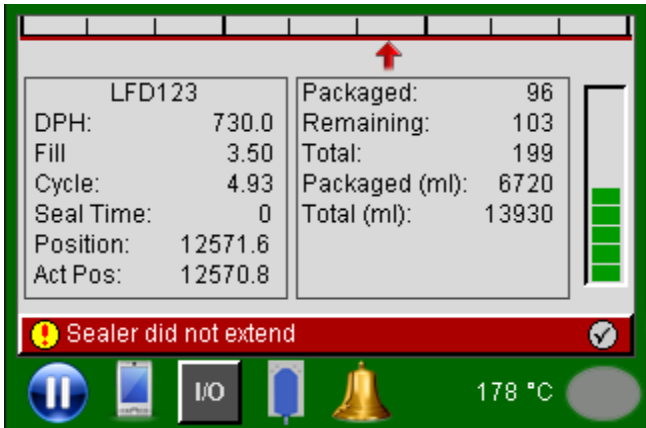


Figure 4.15.1 Error During Production



Figure 4.15.2 Error During Pause

To clear an error during production, simply touch the red error bar. A control box will pop up similar to Figure 4.15.2. This allows the user to scroll through the errors. Press the '✓' to acknowledge the error. Processing will resume, provided that the issue that caused the error is resolved.

To clear an error during pause, the same procedure can be followed with one additional step. In addition to acknowledging the error, operation must be resumed ('RESUME' button pressed). This allows the machine to clear the error and continue processing.

Sometimes it may be necessary to pause the machine before the error can be cleared. This is the case when the error is due to the film being out of place. To clear this type of error, press 'PAUSE', then adjust the carrier so that the film is in correct alignment. Once the film is in the appropriate place, return to the pause menu. Press 'RESUME' to return to the production screen. Now the error can be acknowledged and production can continue.

By pressing the bell shaped button, a complete list of current and unacknowledged alarms can be displayed. The alarms can be acknowledged on this screen as well.

****ERRORS WILL NOT CLEAR WHILE PAUSED. THE ERRORS MAY BE ACKNOWLEDGED, BUT THEY WILL NOT CLEAR UNTIL MACHINE OPERATION IS RESUMED.**

4.16 Error Bypass

In some instances, such as if a sensor fails, the operator may desire to bypass an error to enable processing to continue until the sensor can be replaced. To bypass an error, follow the procedure to login, go to “Utilities”, then “Alarm History” and press ‘Config’ at the bottom of the page. Then scroll up or down to select the desired error to bypass, and press ‘Bypass’. An icon will indicate that the alarm is bypassed.



If an alarm is bypassed, the system delays a set time before continuing rather than wait for the sensor to activate. This will cause the machine to slow down slightly, but enables the user to continue processing even if a sensor has failed.

4.17 Login

Certain screens may require Supervisor rights in order to access or adjust settings. To login, press lower right corner of the screen to bring up access screen.

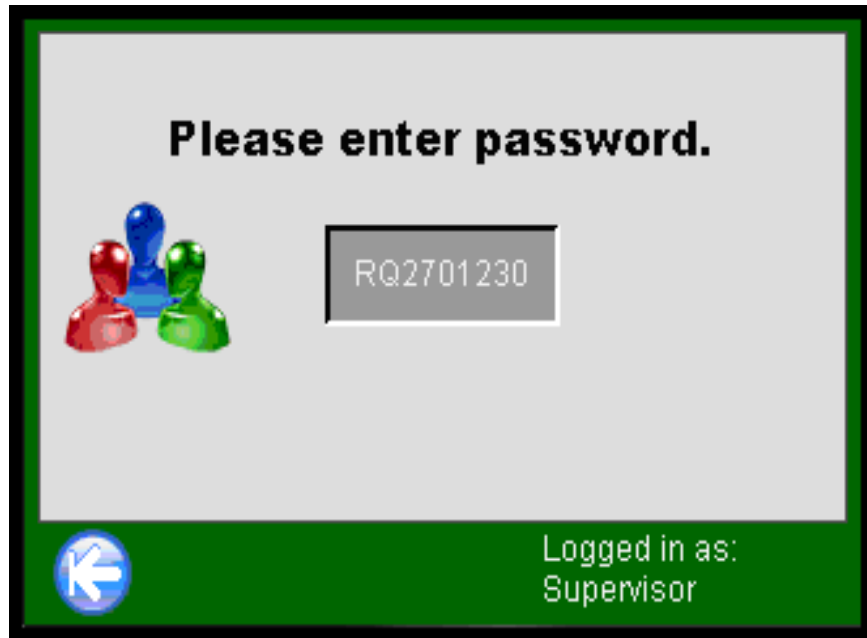


Figure 4.17.1 Login

Press dialog box to enter password.

Password: RQ2701230

Click 'ENTER' to log-in as Supervisor.

Click 'BACK' for main screen. You will now be able to access locked features.

4.18 System Settings

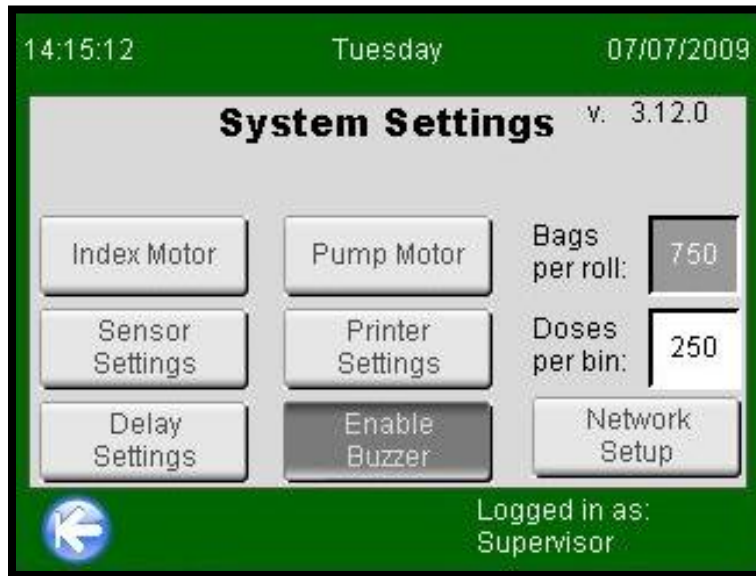


Figure 4.18.1 System Settings

Index Motor: Settings for transport belt

Pump Motor: Settings for pump motor

Sensor Settings: Enabled the bag tip sensor, fluid sensor and index trigger sensor

Bags per roll: Default value for bags per roll

Doses per bin: Set value for number of doses to place in each bin

Printer Settings: Label format and communication information

Delay Settings: System delay settings

Enable buzzer: Enable/disable buzzer

Network Setup: Settings for logging to network location

4.19 Display Settings

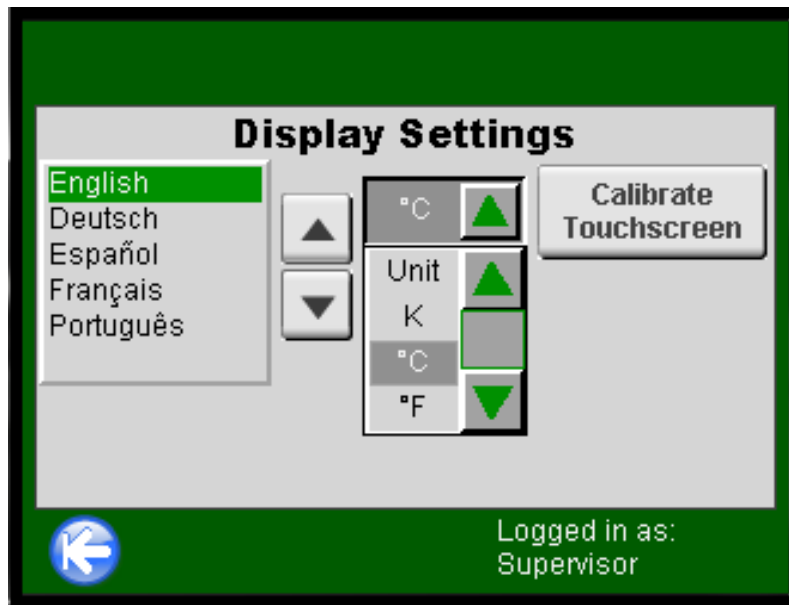


Figure 4.19.1 Display Settings

Select desired language and unit of measure.

To calibrate touch screen, touch calibrate button. Figure 4.19.2 Calibration will appear. Press targets as they appear. When completed user will return to 'DISPLAY SETTINGS' screen.

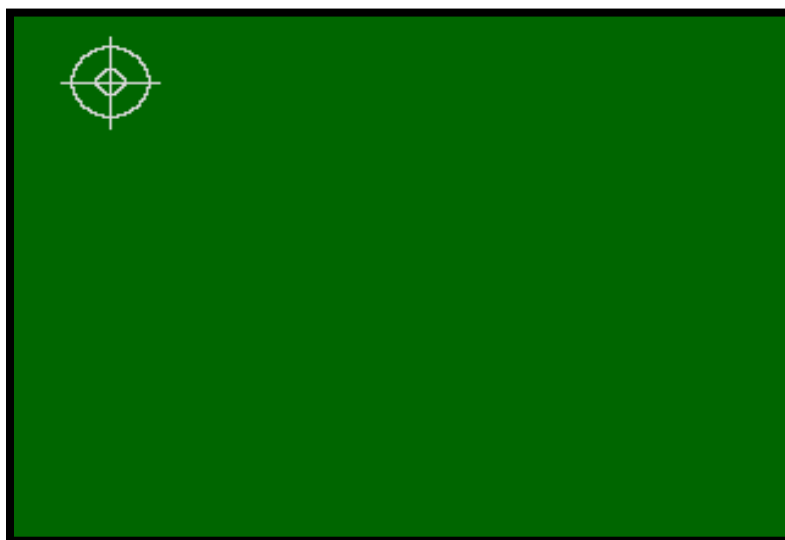


Figure 4.19.2 Calibration

4.20 Printer Settings



Figure 4.20.1 Printer Settings

A variation of custom labels are available to use. To select a label other than default, press the drop-down button and select the appropriate custom label format. Some formats are compatible with a logo. To use, enter the name of an image file stored on the printer. To change logos, enter the name of the new logo and press 'UPDATE'. Upon completion, select a label format containing a logo.

*****A default logo is provided with the file name "logo." If an additional logo is desired, contact ReproQuest for assistance in setting up a custom logo.***

If a thousand date is desired, select an appropriate label containing the thousand date value. The date is calculated automatically using the offset value. The offset value corresponds to the thousand date on January 2, 1970. If the thousand date needs to be adjusted, the offset should be adjusted correspondingly.

The items in the left column correspond to the status of the printer communication. A value of zero "0" represents proper functioning. If a value other than zero is present, consult page 102.

OPERATING PROCEDURES

4.21 Pump Motor Settings

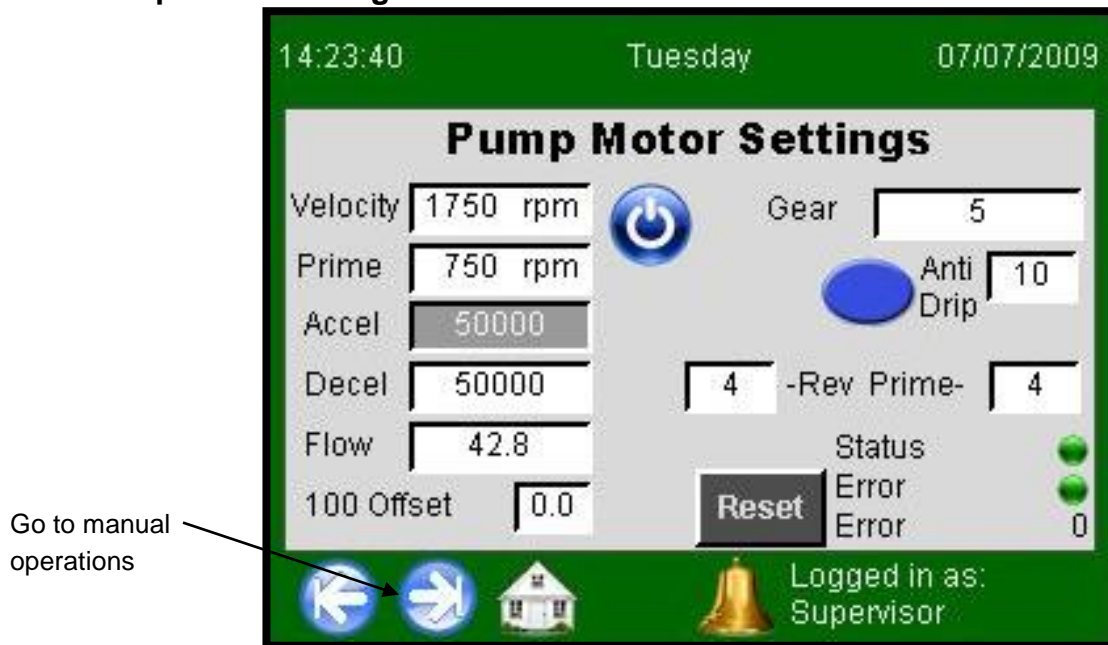


Figure 4.21.1 Pump Motor Settings

Velocity: Speed of pump used during filling

Default = 1750 rpm

Accel & Decel: Value used for acceleration and deceleration

Default settings as shown above (Figure 4.21.1). Maximum values of 50000

Flow rate: Value used to determine motor revolutions for desired volume

Default = 32. Value is changed automatically by calibrating the pump

Anti-Drip: After pumping is complete, reverses specified distance to aid in reducing drip

Prime Velocity: Velocity used during manual priming of pump

Rev: Number of revolutions to reverse pump and empty tubing after processing

Prime Revs: Additional revolutions added during first dose, used in priming of pump

Default = 4

100 Offset: Volume offset that compensates for volume changes throughout batch using the following formula:
 $\text{setpoint} + \text{offset} \left(\frac{\text{total packaged}}{100} \right)$

4.22 Index Motor Settings

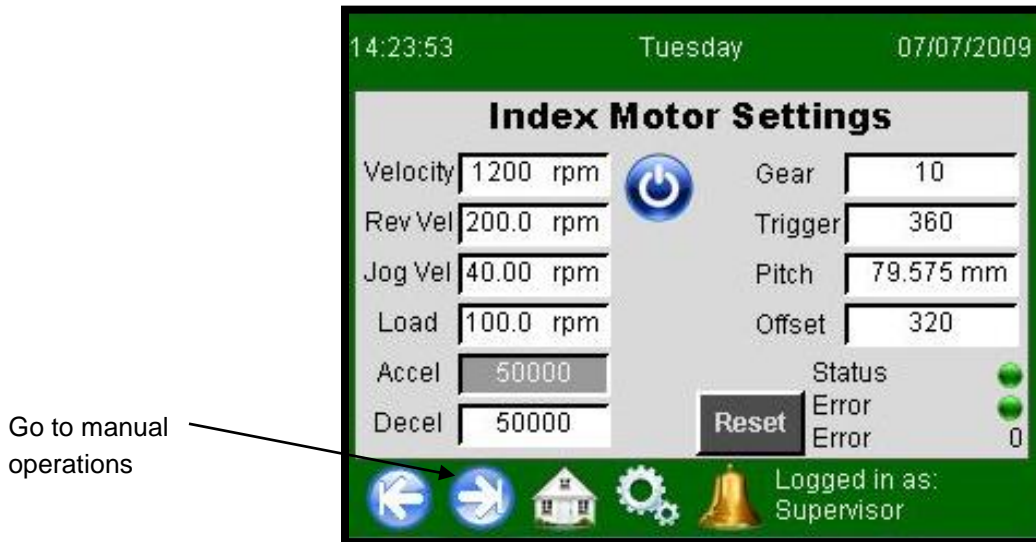


Figure 4.22.1 Index Motor Settings

Velocity: Speed of pump used during filling

Default = 1200 rpm. Maximum velocity of 2000 rpm

Accel & Decel: Value used for acceleration and deceleration

Default settings as shown above (Figure 4.22.1). Maximum values of 50000

Reverse Velocity: Velocity used during unloading

Default = 200.0

Trigger: Offset distance of index registration sensor - used to set position of index axis during production

Default = 360

Jog Velocity: Velocity used during adjustment of index

Default = 40.00


Load Velocity: Velocity used during film loading

Default = 100.0

Pitch: Diameter of drive pulley used to calculate index advance distance

Default = 79.575

4.23 Delay Settings



The screenshot shows a green background with a white title bar at the top. The title bar contains the time '14:30:24', the day 'Tuesday', and the date '07/07/2009'. Below the title bar is a white box with the title 'Delay Settings'. Inside this box is a table of settings. The table has three columns. The first column contains 'Blade E/R', 'Seal E/R', 'Film Error', 'Print Com', and 'Label Rot'. The second column contains 'Cut E/R', 'Fill U/D', 'Index TO', 'Label TO', and 'Label E/R'. The third column contains 'Cut U/D', 'Prime TO', 'Pump TO', 'Lab Delay', 'Rew Delay', and 'Rew Time'. Each setting has a corresponding value in a box. At the bottom of the screen, there is a blue arrow icon on the left, a gold bell icon in the center, and the text 'Logged in as: Supervisor' on the right.

Delay Settings					
Blade E/R	1500	Cut E/R	3000	Cut U/D	3000
Seal E/R	2000	Fill U/D	2000	Prime TO	9500
Film Error	3000	Index TO	5000	Pump TO	8000
Print Com	10.0	Label TO	4000	Lab Delay	2000
Label Rot	2000	Label E/R	2000	Rew Delay	1550
				Rew Time	400

Figure 4.23.1 Delay Settings

Figure 4.23.1 shows the error delay settings. These values determine the delay before an error occurs for each operation.

<u>Blade E/R:</u>	Delay for blade extending and retracting
<u>Seal E/R:</u>	Delay for sealer to extend and retract
<u>Film Error:</u>	Delay for bag placement sensor
<u>Print Com:</u>	Delay for printer communication
<u>Label Rotate:</u>	Delay for label arm to rotate up and down
<u>Cut E/R:</u>	Delay for bumpers to extend and retract
<u>Fill U/D:</u>	Delay for fill raising and lowering
<u>Label E/R:</u>	Delay for label arm to extend and retract
<u>Cut U/D:</u>	Delay for cutter to raise and lower
<u>Prime TO:</u>	Delay for pump during first dose
<u>Lab Delay:</u>	Delay for picking up label
<u>Rew Delay:</u>	Delay before rewinder removes slack in label backing.
<u>Rew Time:</u>	Length of time rewinder remains on to remove slack in label backing.

4.24 Manual Motor Control

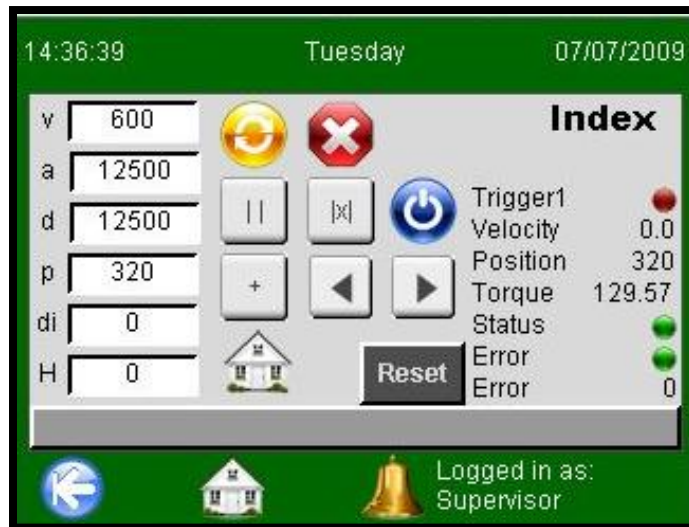


Figure 4.24.1 Manual Motor Control

If manual operation of a motor is desired, each motor can be operated independently (Figure 4.24.1).

a: Acceleration (degrees/sec/sec)

d: Deceleration (degrees/sec/sec)

v: Velocity (degrees/sec)

di: Additive distance to move, press '+' to call for movement (degrees)

p: Absolute position to move, press '|' to call for movement (degrees)

H: Home position. Press 'HOUSE' to home axis (degrees)

Act Velocity: Current velocity (degrees/sec)

Act Position: Current position (degrees)

Torque: Feedback torque (Nm)

OPERATING PROCEDURES

4.25 Diagnostics

The inputs and outputs can all be monitored on the diagnostic pages. The outputs can also be toggled manually for diagnostic purposes.



Figure 4.25.1 Inputs

Toggle between pages.



Figure 4.25.2 Outputs

4.26 Heat Sealer Information

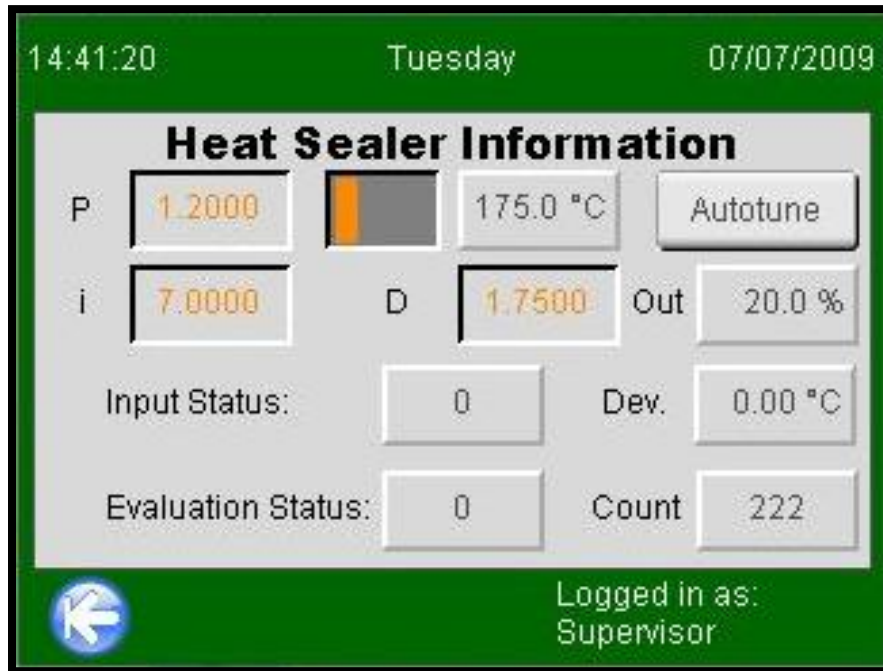


Figure 4.26.1 Heat Sealer Information

The status of the weld station (Figure 4.26.1) can be monitored. The P, I, and D settings can be manually adjusted or determined via the 'AUTOTUNE' command.

4.27 Time/Date Adjustment

The date and time can be adjusted by going to the 'System Information' page (Figure 4.27.1). Enter the hour, minute, month, day, and year in the corresponding boxes. Press 'Set RTC'. The date and time should update to the settings entered. If it did not update and a number other than '0' is displayed in the box beneath 'Set RTC' contact ReproQuest for assistance.

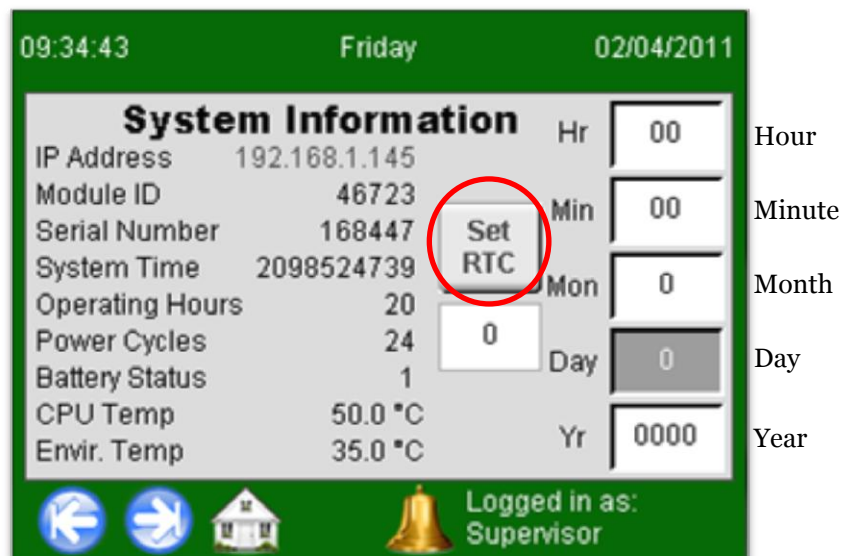


Figure 4.27.1 System Information

V) MAINTENANCE

5.1 General Considerations and Cleaning

Before any cleaning procedure is performed, the main power switch must be 'OFF' and pressure relieved from the pneumatic system. **** FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY**

Any part of the RQ 800 that has come into contact with semen or filled bags throughout production should be cleaned daily. These areas include, but are not limited to: transport belt, bag guides, dispensing needle(s), sealing anvil, label arm, dispensing chute and pail platform.

The machine should be wiped down with the appropriate cleaning agent and a soft lint-free cloth. *Simple Green*™ or *Formula 409*™ can be used to clean the machine of any visible debris and fluid. To maintain smooth operation, the transport belt, along with other moving components of the machine should be cleaned on a weekly basis or whenever there is visible build-up of debris or semen.

Isopropyl alcohol can be used to clean the metal components of the machine, but any contact with sensors or plastics MUST BE AVOIDED due to possible damage. Alcohol will cause plastic to crack. Each of the photosensors should be carefully cleaned with distilled water and a soft lint-free cloth or cotton swab.

****BE ESPECIALLY CAUTIOUS WHEN CLEANING NEAR THE CUTTING BLADE, AS IT IS SHARP AND POTENTIALLY DANGEROUS**

Table 5.1.1 Maintenance Schedule

Frequency	Task
Daily	Clean bag separation guide Clean dispensing chute and label station Clean pail platform
Weekly	Clean transport belt Clean sealing anvil Remove any adhesive from printer and roller with mineral spirits
Monthly	Clean and lubricate cutter slide and shafts Check cutter blade Clean printer printhead with cleaning pen Check fluid bowl on air filters Check filter elements on air filters Check filter element on vacuum sensor

5.2 Recommended Maintenance Equipment

The table below outlines a general recommendation of tools and parts to keep on hand for servicing of the RQ 800.

***Please note this is only to be used as a guide, and is not an all-inclusive list for every possible scenario that may occur.*

Table 5.2.1 Maintenance Supplies

Tools	Lithium grease Dry lubricant Thermal printer cleaning pen English and metric hex wrench set Small Screwdriver Set
Cleaning Agents	Simple Green™, Formula 409™ Cotton swabs or Lint-free Cloth
Parts	10A fuse Cutter blade Filter elements Sealing Anvil

5.3 Lubrication

5.31 Cutter Station

Shafts (1): Clean using wet rag. Dry thoroughly.

Slide (2): Lubricate shafts with thin layer of lithium grease.

Cylinder (3): Clean using wet rag. Dry thoroughly. Lubricate shafts with thin layer of lithium grease.

Bumper (4): Using cotton swab, apply thin layer of lithium grease to the inside surfaces of the blade slot, if desired.

5.32 Transport Belt

Thoroughly clean the fingers and track where the belt moves along the machine using a wet rag. Dry thoroughly. Also apply small amount of dry lubricant on each finger.

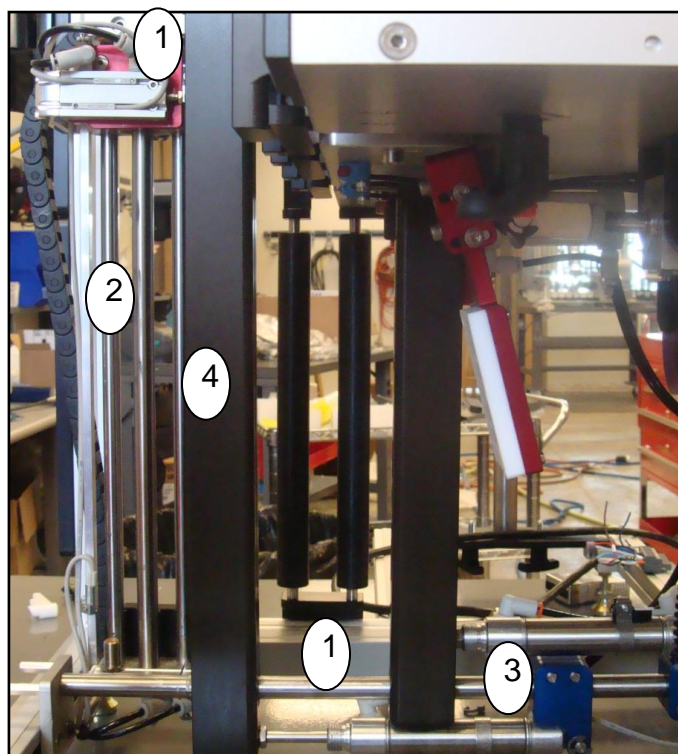


Figure 5.3.1 Cutter Station

5.4 Adjustment

While making adjustments, actions can be tested individually using the 'DIAGNOSTICS' screen. Press and activate desired output to ensure component is running smoothly after adjustment. Entire functions can also be tested at the 'FEATURE TEST' screen menu.

5.41 Transport Belt

The film feeds through the machine from the bag roll platform. It is critical that the bags are feeding evenly into the machine and that the holes line up with the fingers. If the film is not in proper alignment, the bags will tend to jump off the fingers or cut improperly. The platform can be adjusted by loosening the lock collar (Figure 5.4.1) located beneath the platform and adjusting accordingly

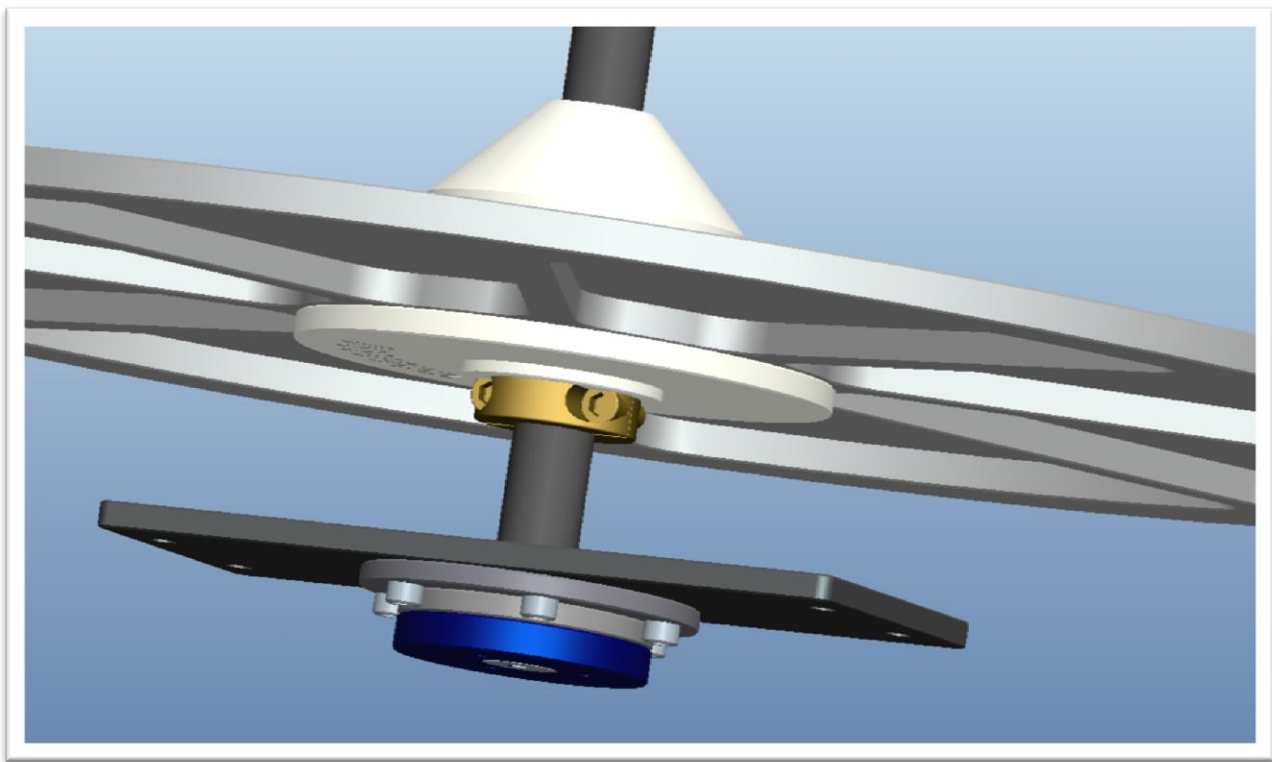


Figure 5.4.1 Bag Roll Platform Adjustment

To adjust tension of the belt, use levers located underneath main frame (Figure 5.4.2).

Turn clockwise to tighten and counter-clockwise to loosen. When desired tautness is achieved return lever to locked position, out of the way of any moving parts. The belt should be firm, but not too tight.

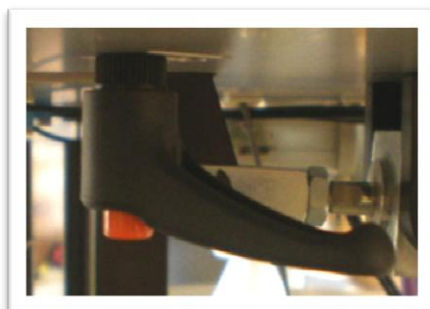


Figure 5.4.2 Belt Tension Adjustment

There is also a registration sensor used to track the indexing of the belt as it advances the film. If the belt is not moving to the correct position, the trigger offset should be adjusted (Sec 4.22). If the sensor is not registering, it may need to be adjusted in or out. The sensor is located in the support bracket (Figure 5.4.3) for the belt, located inside the main frame. This sensor can also be disabled by the operator (see sec 4.18 on page 32).

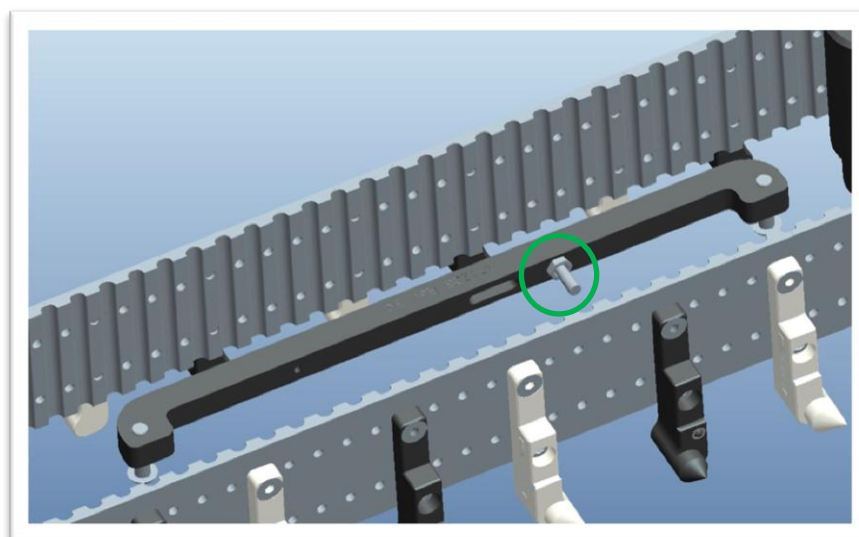


Figure 5.4.3 Index Registration Sensor

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The tip sensor (Figure 5.4.4) is used to verify that a tip is present on the bag prior to filling. The yellow light should be on when no tip is present and should turn off as a tip passes through it. The following steps outline how to properly train the sensor:

1. Move a bag so that the tip is in the middle of the tip sensor.
2. Hold the '+' and '-' buttons simultaneously for 1 second. The red LED blinks.
3. Remove the tip from the sensor.
4. Press the '-' key for 1 second. The red LED switches off.
5. If the red LED blinks, repeat the procedure. Otherwise the procedure is complete.

The '+' and '-' buttons can be used to modify the switching threshold if necessary. If the LED does not turn off when a tip is present, press the '+' button. If the LED remains off with no tip present, press the '-' button. This sensor can also be disabled by the operator (see sec 4.18 on page 32).

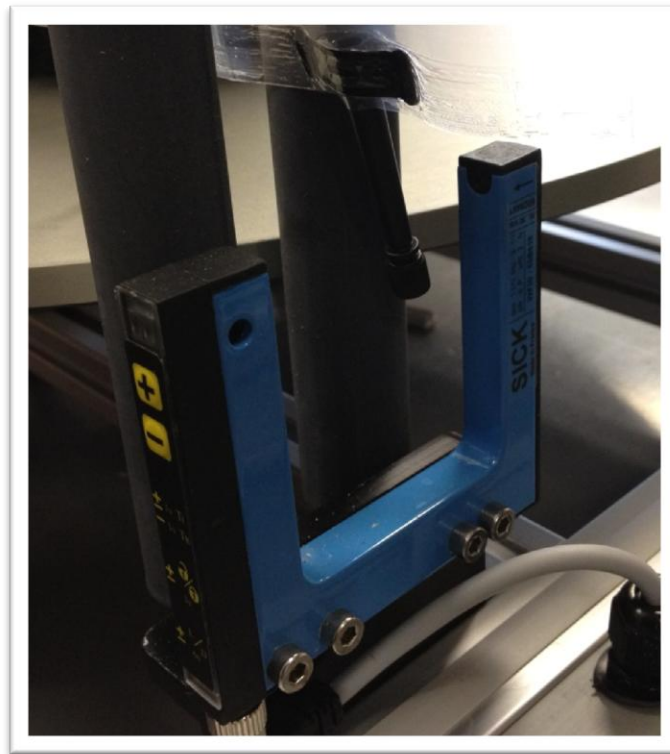


Figure 5.4.4 Bag Tip Detection Sensor

5.42 Cutting Station

The cutting station is considered in ready position when the two black bumpers are separated and the blade is retracted. To begin cutting process, bumpers will close together, holding film in place while the slide lowers. Blade will extend and cutter will raise. After bag has been slit, the blade will retract and the bumpers will return to their starting positions.

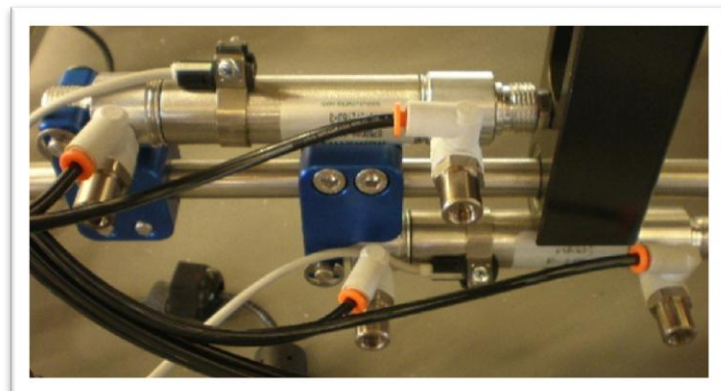


Figure 5.4.5 Lower Cutter Cylinders

It is important for smooth operation that the two bumpers are properly aligned, and that they move at the same speed.

There are four cylinders responsible for extending and retracting the bumpers. The two lower cylinders (Figure 5.4.5) and two upper cylinders (Figure 5.4.6 and Figure 5.4.7). One is located inside the cabinet, and one is located on the underside of the cabinet. Each of the upper cylinders has

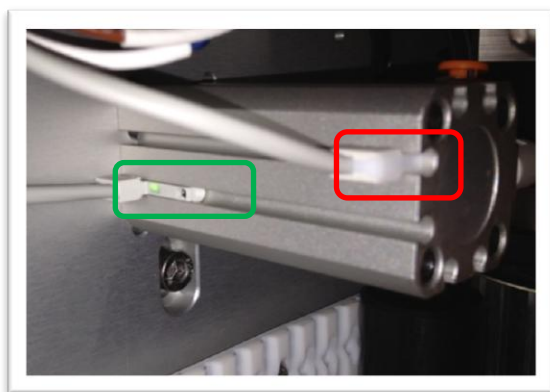


Figure 5.4.6 Upper Cylinder inside cabinet

two sensors (one for extend position and one for retract position).

To adjust bumpers, loosen the screws in the blue shaft collars located on the guides. Ensure bumpers are parallel and meet firmly in the middle.

Adjustment of speed is done by inserting a flat-head screwdriver into corresponding speed controllers. Turning clockwise will decrease speed, likewise counter-clockwise will increase speed.

The sensors for cutter extend and retract are located on the upper cylinders (square style). When the machine is at rest in the home position, the left (green) sensor in Figure 5.4.6 and left (green) sensor in Figure 5.4.7 should be illuminated. When the cutter bumpers are in the cut position, the opposite sensors (red) should be illuminated.



Figure 5.4.7 Upper Cylinder beneath cabinet

MAINTENANCE

The slide for the cutter has speed controllers located at the top to regulate the speed of the slide. There are also two sensors, one located at the top and one at the bottom. In the home state at rest, the upper sensor (green) should be illuminated (Figure 5.4.8). When the slide lowers to perform the cut, the lower sensor (red) should illuminate.

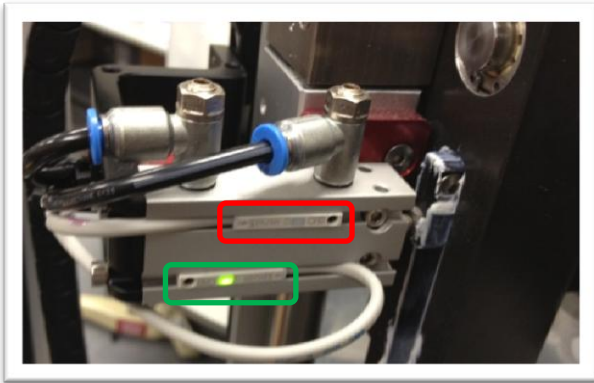


Figure 5.4.9 Blade Cylinder

The blade cylinder also has two speed controllers located on the top side. The sensor towards the left (green) in Figure 5.4.9 should be illuminated when the machine is at the home position. When the blade extends, the right sensor (red) should illuminate.

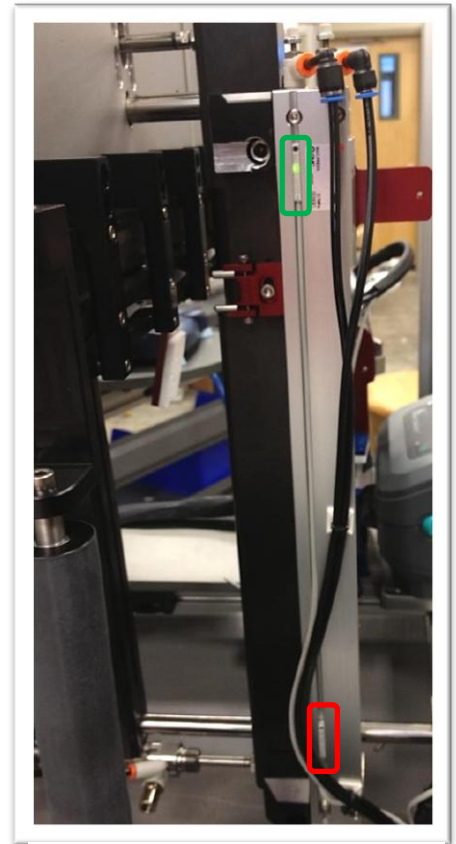


Figure 5.4.8 Cutter Slide

5.43 Fill Station

The fill station consists of a slide to raise and lower the needle, along with a needle holder and the needle. Figure 5.4.10 shows the needle properly aligned, attached to tubing and in the lowered position. The height can be adjusted by using the bumpers to set top and bottom of stroke (yellow in Figure 5.4.11). Always ensure that the stops on the slide are in place and that the jam nuts are tight before making adjustments to the rest of the station.

When the needle is in the raised, resting position the needle should reach down just below the top of the film. This ensures that the needle feeds between the two sides of the film. If the needle is too low, it will “jump” out of the film.

Adjust speed so that the needle raises and lowers smoothly.

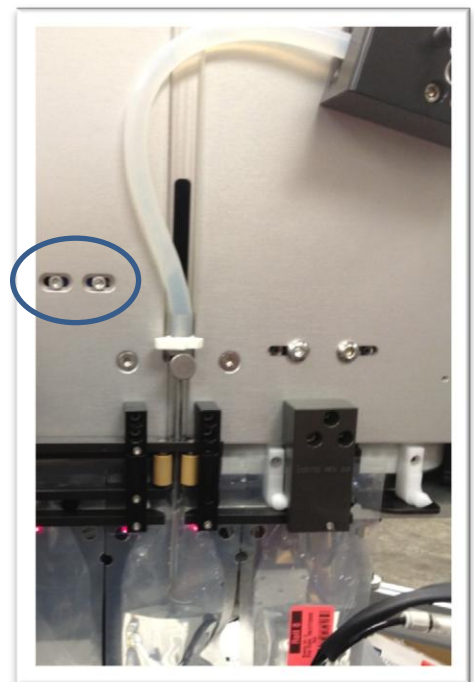


Figure 5.4.10 Needle in Lowered Position

Adjust orientation of the needle so that it moves straight up and down in a smooth, fluid motion. The slide can be adjusted left to right to ensure that the needle holder is not rubbing on the side of the slot (blue in Figure 5.4.10). The needle holder can be moved in or out to ensure the needle is aligned with the guide hole (blue in Figure 5.4.11).

The sensors for the slide are located at the top and bottom. When the station is at rest in the home position, the top sensor (green in Figure 5.4.11) should be illuminated. When the station is lowered, the lower sensor (red in Figure 5.4.11) should be illuminated.

The fluid detection sensor (Figure 5.4.12) is used to monitor air bubbles in the fluid as it is pumped. If air bubbles are detected, the machine will notify the operator. The red LED should remain lit as long as fluid is present in the tubing.

If the sensor is not detecting air bubbles, the sensor may be dirty or the sensitivity may need to be decreased.

If the sensor is detecting bubbles, even though the tubing is full of fluid, the sensitivity may need to be increased.

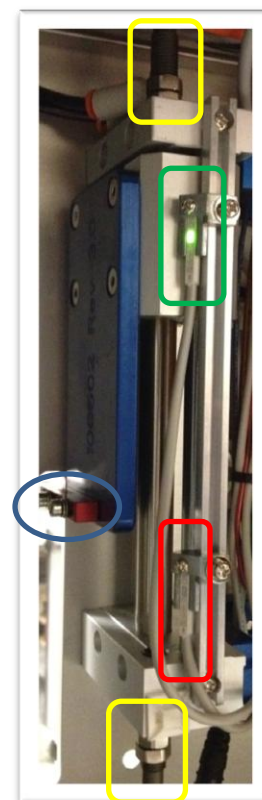


Figure 5.4.11 Fill Station Slide

To adjust the sensitivity, open the clear door that covers the front of the sensor. Using a small flathead screw driver, make small adjustments.

- To increase sensitivity, turn clockwise
- To decrease sensitivity, turn counter-clockwise



Figure 5.4.12 Fluid Sensor

This sensor can be disabled by the operator (see sec 4.18 on page 32).

5.44 Sealing Station

The sealing station functions using a heat anvil mounted on a pivot arm to perform the sealing action. The station is actuated by a cylinder located beneath the cabinet.

Adjust the stroke by loosening jam nut (Figure 5.4.13). The anvil can be moved by threading the cylinder rod in or out of the clevis.

- To increase the travel of the cylinder and effectively move the anvil towards the bracket, turn the cylinder rod clockwise (as facing machine).
- To decrease the travel of the cylinder and effectively move the anvil away from the bracket, turn the cylinder rod counter-clockwise (as facing the machine).

****The anvil should extend far enough to loosely meet the bracket without a bag in place. Always retighten the jam nut before resuming processing.**

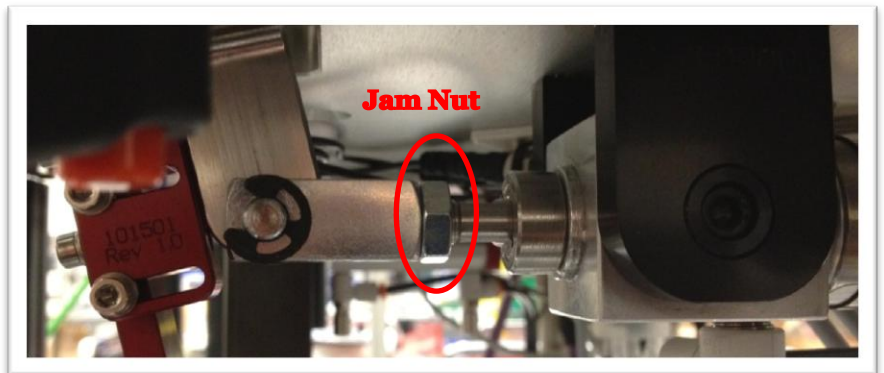


Figure 5.4.13 Sealer Adjustment

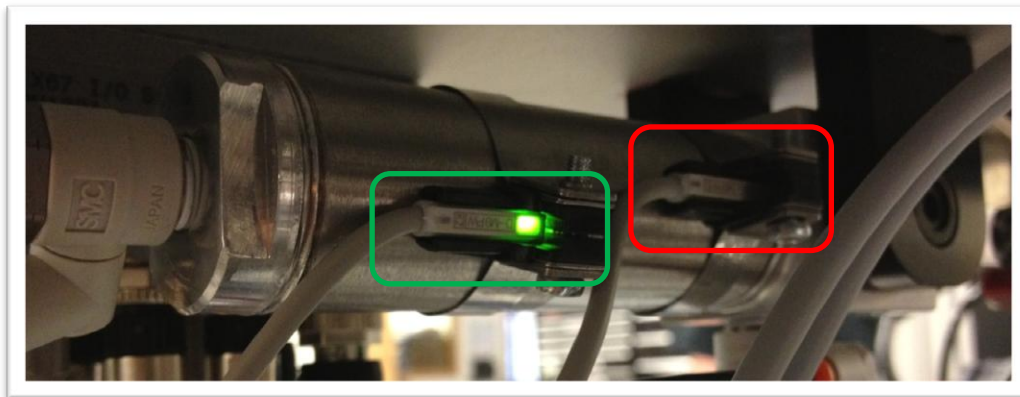


Figure 5.4.14 Sealer Cylinder

The sensors for extend and retract can be adjusted if necessary. The sensor for retract (green in Figure 5.4.14) should be illuminated when the cylinder is retracted and in the rest position. The sensor for extend (red in Figure 5.4.14) should be illuminated when the machine is in the sealing position.

5.45 Labeling Station

During the index advance, a label is printed using the batch information entered into the computer. This process is fully automated and uses a pneumatic arm and vacuum to transfer each label onto the bag. The arm begins by lowering in front of the printer. The vacuum and air jet are turned on and a label is printed. Once the label has been detected, the air jet turns off and the arm retracts. After the index move is complete and the film is in place, the arm rotates up, turns off the vacuum and extends to apply the label on the bag. The arm then retracts and rotates back to the home position.

There are two actuators and five sensors used to accurately and efficiently apply the label. The vacuum sensor (sec 3.3) indicates when the label has been picked up. The two sensors which indicate rotation are located to the right of the printer (Figure 5.4.16). The sensor that indicates rotation down to the home position is on the right (green). The sensor for rotation into the apply position is on the left (red). There are also two sensors on the arm (Figure 5.4.17) to indicate when



Figure 5.4.15 Printer Plate

the arm is extended, such as when the label is being picked up or applied. When the arm is in the retracted home position, the top (green in Figure 5.4.17) sensor should be illuminated. When the cylinder is extended, the lower sensor (red in Figure 5.4.17) should be illuminated.

The labeling station should be setup by following the subsequent steps.

- Slide the printer plate forward so that the dowel is centered in the slot (Figure 5.4.15).
- Move the blower mounting bar (blue piece in Figure 5.4.18) towards the printer so that it is just resting against the front of the printer dispenser and tighten.
- Adjust the blower bar so that the holes are centered on the label stock of the printer (Figure 5.4.21). The holes should be facing upwards or angled back slightly towards the printer.
- Adjust the position of the arm using three screws located beneath the arm. Adjust it so that the pickup pad is centered on the label stock and parallel with the printer peeling bar (Figure 5.4.20).

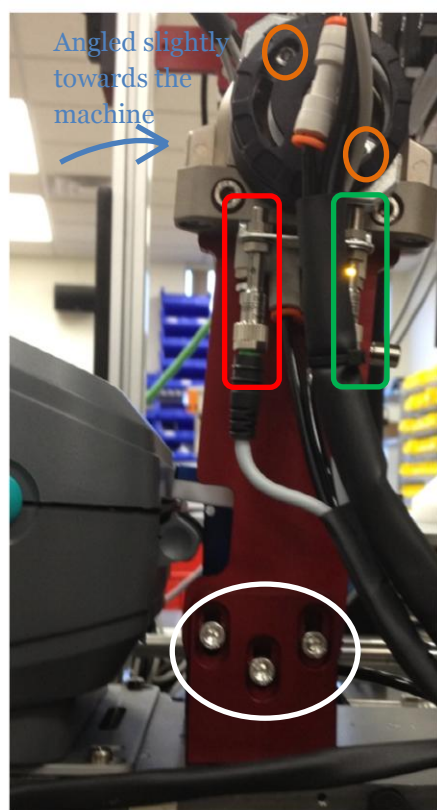


Figure 5.4.16 Label Arm and Rotary Actuator

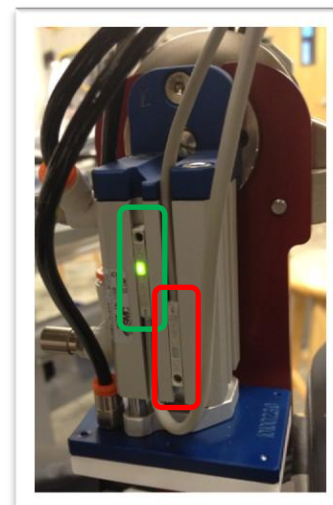


Figure 5.4.17 Label Arm Vertical

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- Adjust the height of the arm using the three screws circled in Figure 5.4.16. Tilt the arm assembly forward (away from the printer) as indicated by the arrow. Adjust the height so the pad comes down just above the peel off bar (as shown in Figure 5.4.19). Tighten screws.
- Adjust the rotation using the stops (circled in orange, Figure 5.4.16) to adjust the arm so that it rotates down to nearly touch the printer lid. Adjust the stops by loosening the screw. Once the screw is loose, rotate arm to desired position and move the stop down into position. Re-tighten screw. The screw is attached to the stop and slides in the groove along the circumference of the cylinder. The pad should

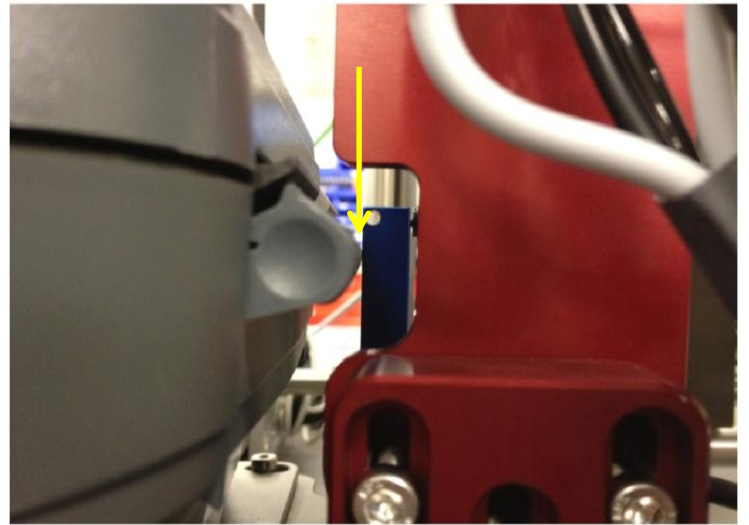


Figure 5.4.18 Blower Mount Position

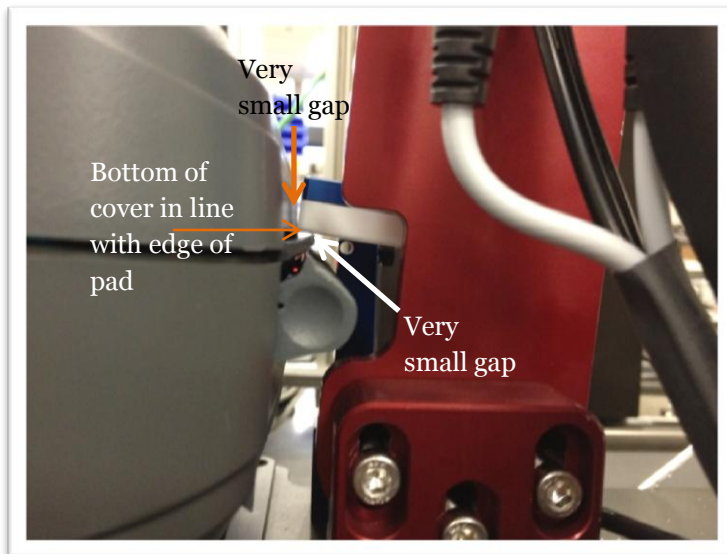


Figure 5.4.19 Label Pad Height and Rotation

not contact the lid or the peel-off bar during operation, but should be as close as possible.

- Recheck that the pad height extends down and nearly touches the peel-off bar and rotates back to nearly touch the printer lid.

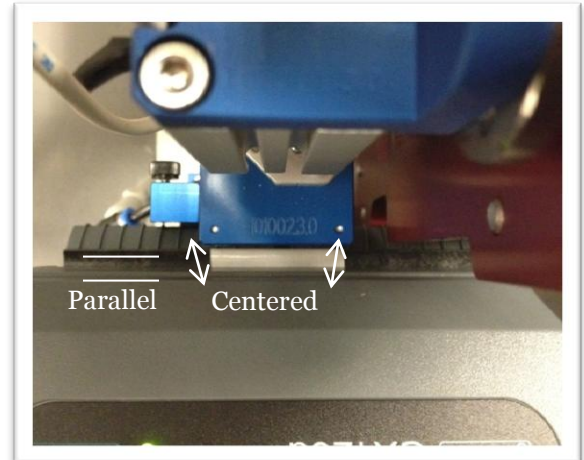


Figure 5.4.20 Label Pad Alignment

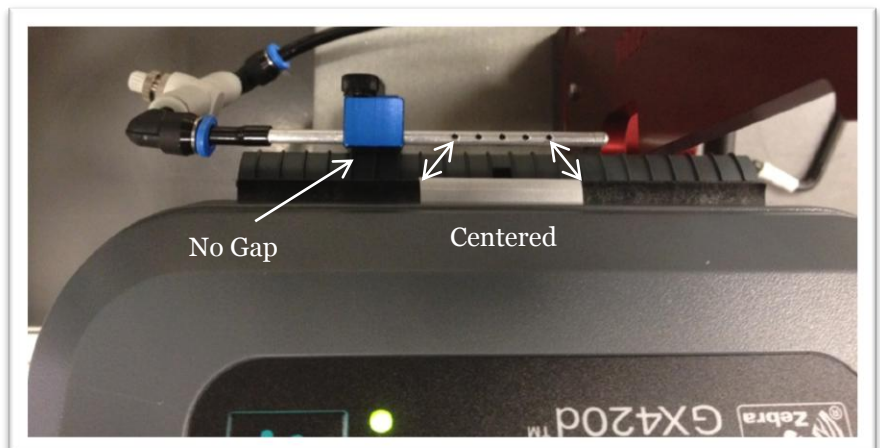


Figure 5.4.21 Blower Bar Position

5.5 Sensors

The following table summarizes the sensors that are found on the machine as well as their general location. For further information, refer to the appropriate section referenced below.

Table 5.5.1 Sensor Descriptions

Input Module	No.	Name	Location	Active State	
X20 Module 3	1	Outside Cutter Retract	Upper cutter cylinder inside cabinet, towards front side of the machine	On when cutter bumpers are retracted to home position	Figure 5.4.6 (p. 46)
X20 Module 3	2	Outside Cutter Extend	Upper cutter cylinder inside cabinet, towards rear of machine	On when cutter bumpers are extended and in cut position	Figure 5.4.6 (p. 46)
X20 Module 3	3	Fill Up	Fill slide inside cabinet, top of slide	On when fill slide is raised and in home position	Figure 5.4.11 (p. 48)
X20 Module 3	4	Fill Down	Fill slide inside cabinet, bottom of slide	On when fill slide is lowered and in fill position	Figure 5.4.11 (p. 48)
X20 Module 4	1	Air Pressure	Front face plate of machine, left sensor	On when air pressure is supplied to machine	Figure 3.3.1 (p.6)
X20 Module 4	2	Vacuum	Front face plate of machine, right sensor	On when vacuum is on and label is on label arm pad	Figure 3.3.1 (p.6)
X20 Module 5	1	Fluid Detection	Inside tubing guide, near pump	On when tubing is inserted into guide and full of fluid	Figure 5.4.12 (p. 48) Error! Reference source not found.
X67 Module 1	1	Blade Retract	Blade cylinder, towards front of machine	On when blade is retracted to home position	Figure 5.4.9 (p. 47)
X67 Module 1	2	Blade Extend	Blade cylinder, towards rear of machine	On when blade is extended and in cut position	Figure 5.4.9 (p. 47)
X67 Module 1	3	Cutter Up	Cutter slide, top of slide	On when cutter slide is raised to home position	Figure 5.4.8 (p. 47)
X67 Module 1	4	Cutter Down	Cutter slide, bottom of slide	On when cutter slide is in lowered position	Figure 5.4.8 (p. 47)
X67 Module 1	5	Inside Cutter Retract	Upper cutter cylinder under cabinet, towards rear of machine	On when cutter bumpers are retracted to home position	Figure 5.4.7 (p. 46)

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X67 Module 1	6	Inside Cutter Extend	Upper cutter cylinder under cabinet, towards front of machine	On when cutter bumpers are extended and in cut position	Figure 5.4.7 (p. 46)
X67 Module 1	7	Bag Tip	Next to rollers as film enters machine	On when no tip present, off when tip in between forks of sensor	Figure 5.4.4 (p. 45)
X67 Module 1	8	Film Position	Under cabinet, between cut and fill station	Off when hole in front of sensor, on when film in front of sensor	Figure 3.4.1 (p. 8)
X67 Module 2	1	Bag Present – Cut	Under cabinet, to the right of the cutter	On when bag in position to the right of the cutter	Figure 3.4.1 (p. 8)
X67 Module 2	2	Bag Present – Fill	Under cabinet, to the right of the needle	On when bag in position at fill station	Figure 3.4.1 (p. 8)
X67 Module 2	3	Seal Retract	Under cabinet on sealer cylinder, towards rear of machine	On when sealer is retracted and in home position	Figure 5.4.14 (p. 49)
X67 Module 2	4	Seal Extend	Under cabinet on sealer cylinder, towards front of machine	On when sealer is extended and in sealing position	Figure 5.4.14 (p. 49)
X67 Module 2	5	Label Rotate Down	Beneath rotary cylinder, towards rear of machine	On when label arm is rotated down and in home position	Figure 5.4.16 (p. 50)
X67 Module 2	6	Label Rotate Up	Beneath rotary cylinder,	On when label arm is rotated	Figure 5.4.16

			towards front of machine	up and in apply position	(p. 50)
X67 Module 2	7	Label Retract	On label arm, towards top of cylinder	On when label arm is retracted and in home position	Figure 5.4.17 (p. 50)
X67 Module 2	8	Label Extend	On label arm, towards bottom of cylinder	On when label arm is extended and in pick-up or apply position	Figure 5.4.17 (p. 50)
ACOPOS	1	Index Registration	Inside cabinet, in support guide for index belt	On when steel insert in black finger is in front of the sensor	Figure 5.4.3 (p. 44)

5.6 Component Descriptions

5.61 Vacuum Filter and Air Filter/Regulator

The vacuum filter (Figure 5.6.2) is important to protect the vacuum generator and maintain proper operation of the labeling station. It is important to maintain a filter free of excessive restriction and blockage.

The filter elements (Figure 5.5.1) located on the rear of the machine are also important in keeping the pneumatic components on the machine operating smoothly. The component on the right is a soft start solenoid that provides a soft supply of pressure to the lines upon start up.

5.62 Emergency Stop Relay

When power is turned on, green light by U_i should be illuminated. If this light is not on, check the main power switch to ensure it is 'ON' position. The indicator lights for K1 and K2 should both be off when e-stop is engaged. When the e-stop is reset, both lights should be on. During normal operation, all three lights should be illuminated green.



Figure 5.5.1 Filter/Regulator

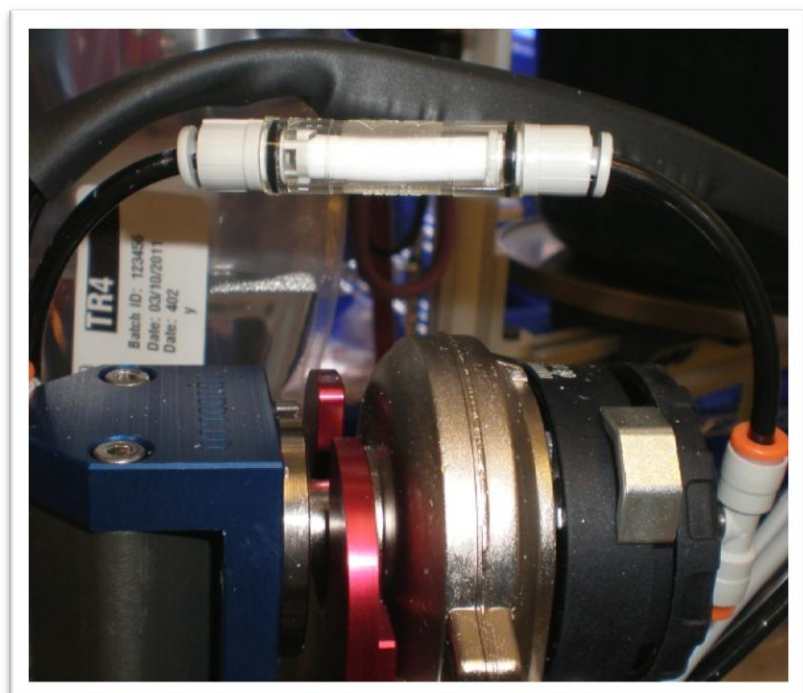


Figure 5.6.2 Vacuum Filter



Figure 5.6.3 Emergency Stop Relay

5.63 X20 I/O Rack

This rack contains the input and output modules. Each module has an information page that can be accessed through 'UTILITIES' screen under 'SYSTEM INFORMATION'.

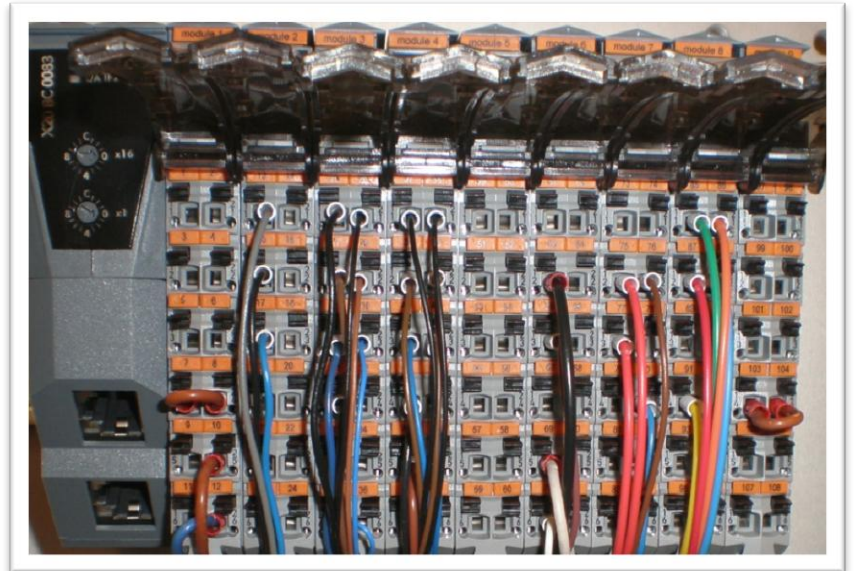


Figure 5.6.4 X20 I/O Rack

Changing a module in the X20 I/O Rack

To remove the terminal block, insert a flathead screwdriver between the top of the terminal block and the desired module (Figure 5.6.5). Carefully pry the tab downward to release the terminal block. Rotate block outwards and downwards (Figure 5.6.6).

Rotate until perpendicular to the block and release the hook from the bottom (Figure 5.6.8).

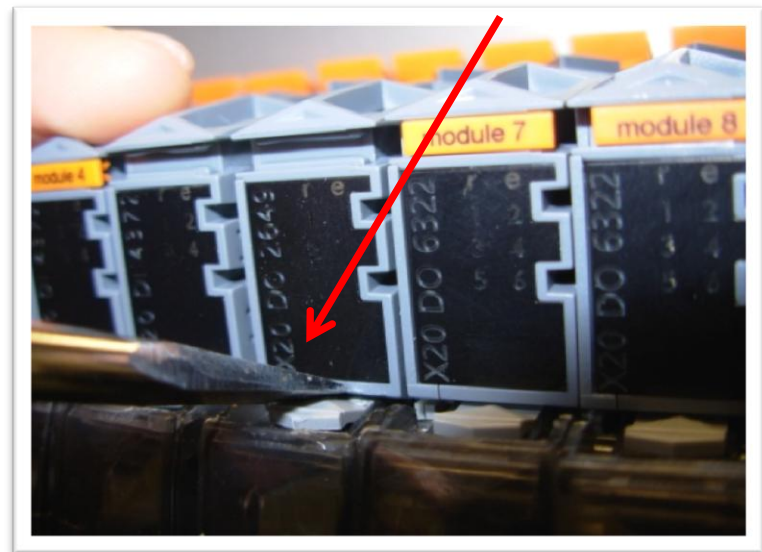


Figure 5.6.5 Removing Terminal Block

Once the terminal block has been removed, press the release at the top of the module, as shown in Figure 5.6.7.

Pull the module straight out by gripping as shown in Figure 5.6.

Replace module by aligning the grooves on top and bottom and inserting straight inwards. Reinstall terminal block in reverse order of removal.

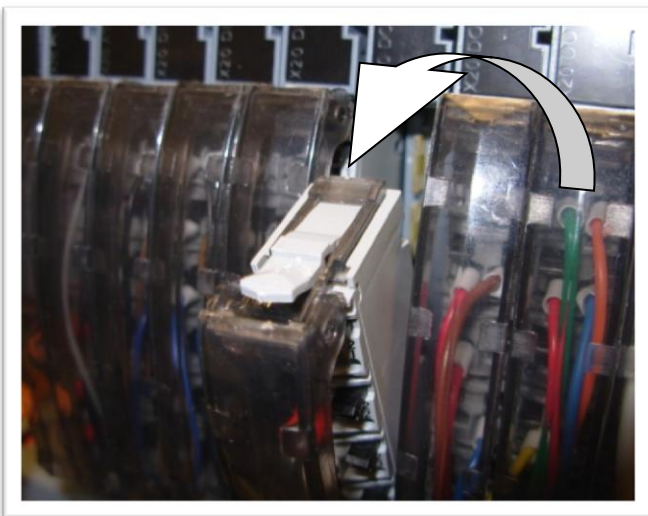


Figure 5.6.6 Rotate Terminal Block

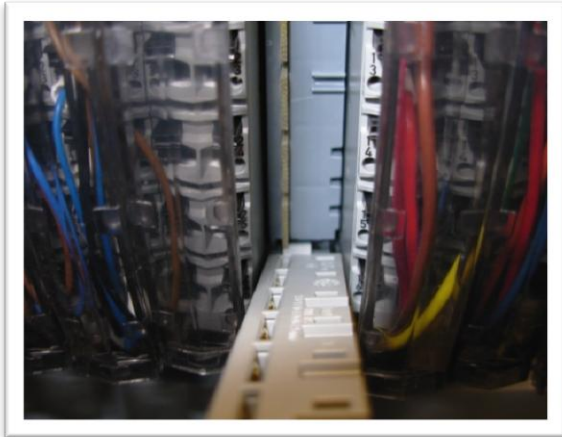


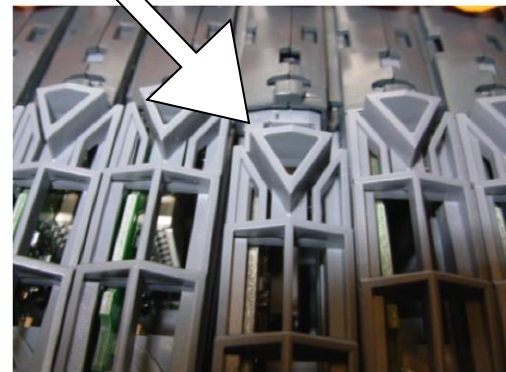
Figure 5.6.8 Release Terminal Block



Figure 5.6 Grip Module

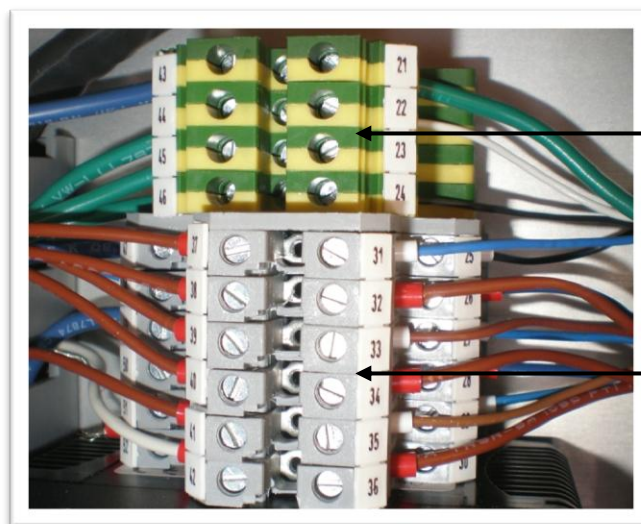


Figure 5.6.7 Release Button



5.64 Terminal Blocks

The terminal blocks distribute the 24VDC power to the components requiring such voltage.



Ground Block

Power Distribution Block

Figure 5.6.9 Power Distribution Block

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5.65 24 and 80 VDC Power Supplies

The 24 VDC power supply supplies power to all of the controls and the printer (left in Figure 5.6.10). The 80 VDC power supply supplies power to the motors and is shown on the right (Figure 5.6.10).

5.66 Valve Manifold

The valve manifold (Figure 5.6.11 Valve Manifold) controls all of the pneumatics on the RQ 800. The yellow LED indicates when a valve is in an active state and supplying air to activate a cylinder.



Figure 5.6.10 Power Supplies



Figure 5.6.11 Valve Manifold

5.67 ACOPOS Drive

The ACOPOS drive powers and controls the index and pump motors. This drive is responsible for all motions of these two features and includes encoder feedback to verify that motion was completed as called.

5.68 Circuit Breakers

The circuit breakers protect the high voltage components. These components include the powers supplies, heater, and the motors. The breakers (Figure 5.6.13) protect from left to right:

24VDC Power Supply (10A)

80VDC Power Supply (10A)

Heater (2A)

Drive Motors (5A)

The black button in the recessed position indicates proper functioning. To test, toggle the red button to open the circuit. Press the black button to reset.

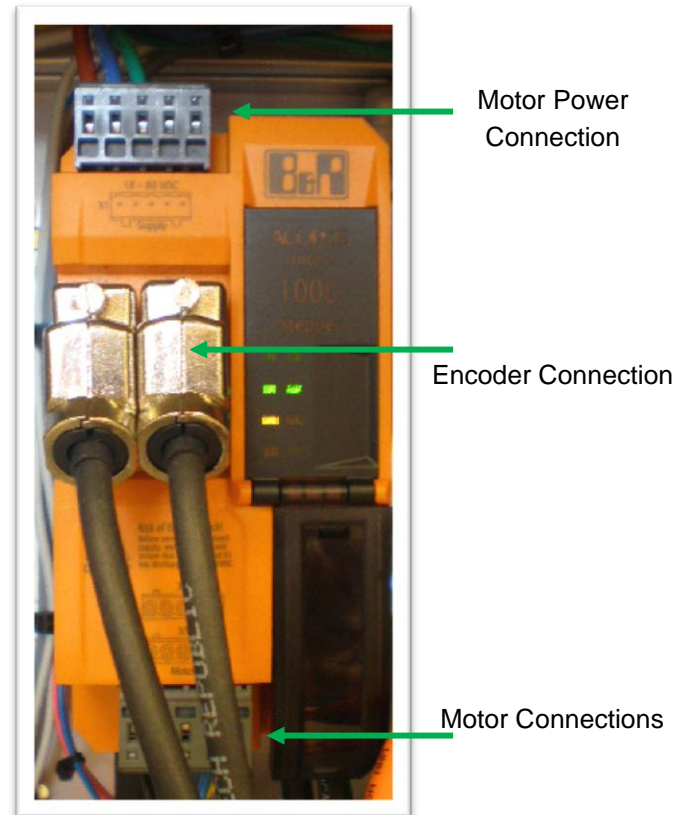


Figure 5.6.12 ACOPOS Drive

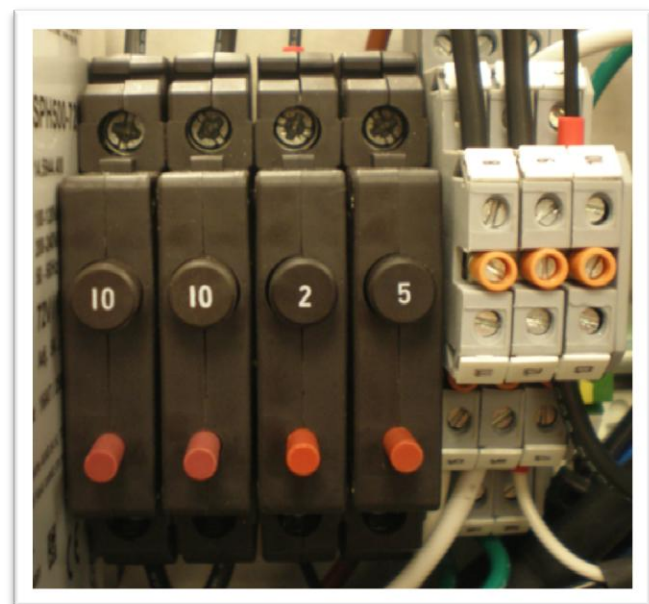


Figure 5.6.13 Circuit Breakers

MAINTENANCE

5.69 MICO Power Distribution Block

The MICO power distribution block (Figure 5.6.14) protects all of the 24VDC components as well as the 24VDC power supply from overloading. There are six channels, each with their own current setting as indicated by the turn dial. From left to right:

Operator Interface	(1A)
X20 I/O Rack	(2A)
ACOPOS CPU	(1A)
XV/X67 Modules	(2A)
Label Rewinder	(1A)
Printer	(4A)



Figure 5.6.14 MICO Power Distribution Block

5.610 Power Inlet

The power inlet (Figure 5.6.15) is located on the left hand side of the machine, next to the master power switch. The power inlet contains a 10A fuse to protect the entire machine.



Figure 5.6.15 Power Switch and Inlet

VI) TROUBLESHOOTING GUIDE

Table 5.6.1 Troubleshooting Guide

Issue	Cause	Steps to remedy
Machine won't power on	Power cord disconnected	Check for loose or broken power cord
	Blown fuse in power inlet	Check fuse (Sec 5.610 on page 61)
	Tripped circuit breaker	Reset circuit breaker (Sec 5.68 on page 60)
	Emergency stop switch engaged	Reset emergency stop switch (Sec 3.2 on page 5)
Bags do not fill	Pump not turning	Check drive shaft for slipping
	Bags not recognized at fill station	Check sensor at fill station. Clean or possibly replace (Sec 3.4 on page 8)
	Motor not running	Check for loose cables (p. 60) Check for pump axis errors Check circuit breaker for motor and drive (p. 60) Replace tubing
	Fill station not enabled	Refer to Section 4.13
	Tip sensor not detecting tip	Ensure that yellow LED indicator is turning off when a tip moves through it. If not lit when no tip is present, press '-' on sensor until light turns on. If yellow when a tip is present, press '+' on sensor until light turns off. Refer to sec 5.41. This sensor can also be disabled by the operator (see sec 4.18 on page 32).
Fill volume inconsistency	Tubing is worn	Move tubing to a new position or replace
	Pump speed is too high	Call manufacturer for recommended pump speed
	Tubing has a kink or sharp bend	Adjust tubing to eliminate kink or sharp bend
	Tubing has a hole	Replace tubing
	Pump head is loose	Check drive shaft for wear
	Tubing not inserted into pump correctly	Reinsert tubing following instructions in Section 3.6

TROUBLESHOOTING GUIDE

Fill station did not lower	Needle sticking in through-hole	Needle may be bent or damaged Needle not centered over slot – move in, out, left or right to correct.
	Slide binding on frame	Ensure that needle holder is not rubbing on the edge of the slot. Move left or right to correct.
	Stop is loose or out of position.	Ensure that stop in in correct position and tighten jam nut.
	Sensor is out of position	Adjust lower sensor so that light is green when slide is in lowered position
Fill station did not raise or not home	Needle sticking in through-hole	Needle may be bent or damaged Needle not centered over slot – move in, out, left or right to correct.
	Slide binding on frame	Ensure that needle holder is not rubbing on the edge of the slot. Move left or right to correct.
	Stop is loose or out of position.	Ensure that stop in in correct position and tighten jam nut.
	Sensor is out of position	Adjust upper sensor that that light is green when slide is in raised position
Film going behind needle at the filling station	Needle is bent	Replace needle
	Needle is out of place	Move needle holder forward to angle the needle backwards.
Film going in front of needle at the filling station	Needle is bent	Replace needle
	Needle is out of place	Move needle holder backwards to angle the needle forward.
Film missing separator at cutter	Gap of separator plates too wide across cutter	Adjust gap
Air not detected in tubing	Air bubble sensor detecting fluid even when no fluid present	Sensitivity too high – turn counter-clockwise to decrease Sensor is dirty – clean with cleaner such as <i>Simple Green</i> [™] or <i>Formula 409</i> [™]
	Foam or other substance being detected as fluid	Decrease sensitivity by turning counter-clockwise

TROUBLESHOOTING GUIDE

Air detected when tubing was full	Air bubble sensor not detecting fluid even with fluid present	Sensitivity too low – turn clockwise to increase This sensor can also be disabled by the operator (see sec 4.18 on page 32).
Bag isn't sealed properly	Temperature too low	Adjust temperature set point (p. 28)
	Sealing anvil dirty	Clean using cleaner such as <i>Simple Green</i> ™ or <i>Formula 409</i> ™ (p. 28 and 41)
	Anvil not extending correctly	Adjust cylinder to provide correct pressure
Printer does not power on	Circuit breaker is tripped	Check circuit breaker (Sec 5.69 on p. 61)
	Power cord disconnected	Check power cord
	Printer power switch is off	Check power switch on printer (Sec 3.7)
Multiple labels ejecting at once	Media sensor is not detecting label	Clean printer sensor
	Media sensor needs calibration	Follow direction in Section 3.74.
Labels not printing	No communication with printer	Check cables Follow directions in Section 3.74 to reset printer
	Out of labels	Replace label stock
	Label stock jammed	Remove printer and clear jam
	Label not removed from dispenser	Remove extra labels from dispenser

TROUBLESHOOTING GUIDE

Film out of place	Film loaded incorrectly	Refer to Section 4.4 on loading film, ensure that it is loaded correctly on the fingers
	Transport belt is out of place	Adjust transport belt into appropriate position (Sec 4.5)
		Index sensor is not detecting finger, adjust so that sensor comes on when a black finger is in front of it
		Trigger offset is incorrect. Adjust offset so that film moves into correct position
	Sensor is not correctly detecting hole in film	Clean sensor Adjust sensor so it is centered on the hole
	Bag is not seated on fingers properly	Refer to Section 4.4 on loading film Film slipping on fingers
	Index sensor is not correctly detecting finger.	Adjust sensor so that it detects black finger when it is in front of sensor. This sensor can also be disabled by the operator (see sec 4.18 on page 32). The user can then adjust to correct position manually (see 4.5).
Film slipping on fingers	Bag platform height is incorrect	Adjust platform height
	Fingers are damaged	Replace fingers
	Film is loaded incorrectly	Refer to Section 4.4 on page 19
Cutters not extending or retracting	Bumpers are sticking	Clean and lubricate according to sec 5.31
	Cylinder out of place	Check all cylinders to ensure they are reaching full stroke and bumpers are parallel
	Not moving parallel	Adjust speed controllers so that all cylinders move at the same speed

TROUBLESHOOTING GUIDE

Cutter slide is sticking	Blade holder and/or slot dragging	Clean and lubricate cutter (Sec 5.31)
	Cylinder slide is sticking	Clean and lubricate cutter (Sec 5.31)
	Blade is catching	Check for blockage or edges that the blade might be catching on
Sealer did not extend	Fingers on transport belt are blocking cylinder	Adjust carrier to proper position (Sec 4.5)
	Cylinder position sensor out of place	Check sensor for appropriate position (Sec 5.44)
	Cylinder slide is sticking	Lubricate slide
Index axis error 4007	Transport belt is slipping	<p>Check for excessive drag on the transport belt</p> <p>Lubricate transport belt</p> <p>Check for film jam</p> <p>Check that sealer is retracted</p> <p>Check that the cutter is retracted</p> <p>Check that the needle is raised</p>
Index axis power on error	Error present on axis	Reset index axis errors (p. 36)
Transport belt not moving	Power not on	Turn power on to motor in 'ADJUST CARRIER' window (Sec 4.5)
Transport belt moving continuously on startup	Index sensor not detecting finger correctly	Adjust sensor so that it detects black finger when it is in front of sensor. If sensor is faulty, disable sensor (sec 4.18) and restart machine.
Pump axis error 4007	Pump motor is slipping	<p>Check that tubing is loaded correctly into pump (Sec 3.6)</p> <p>Check that pump head is mounted appropriately on the motor</p>
	Pump motor settings are incorrect	Contact manufacturer for recommended settings
Low air pressure	No pressure supplied to system	<p>Check air supply lines</p> <p>Check air regulator and filter for issues (Sec 3.3)</p> <p>Check air supply solenoid for power (Sec 5.61)</p>
	Sensor not detecting pressure	<p>Check air lines for block, kink or lead</p> <p>Replace sensor</p>

TROUBLESHOOTING GUIDE

Label not picked up at printer	Filter element on vacuum filter plugged	Replace or clean (Sec 5.61)
	Label already present on pad	Remove label
Label not detected at printer	Label did not print	Check printer communication
	Vacuum sensor set point too low	Refer to Section 3.3.
	Previous label not picked up	Remove any extra labels
	Label did not get picked up at printer	Blower out of position - adjust blower position (Sec 5.45)
		Labels not centered in printer - adjust label roll inside printer
		Vacuum pad not centered on label - adjust position of the labeling arm (Sec 5.45)
		Label stuck to vacuum pad - remove label
Label arm did not extend	Lower sensor on label arm out of position	Adjust so that green light turns on when arm is in extended position
	Arm did not extend	Ensure correct position and that arm is not hitting the printer
		Printer platform too close to bag. Move platform out away from filled bags.
Label arm not in home position	Arm did not retract	Adjust sensor so that light is green when arm is retracted
	Arm did not rotate down	Ensure that sensor towards the front is light when arm is rotated in down position. Ensure that arm is fully rotated down.

****WHEN ERRORS OCCUR DURING OPERATION, FIRST ATTEMPT TO SOLVE PROBLEM BY FOLLOWING TROUBLESHOOTING STEPS. IF THESE SOLUTIONS DO NOT ADEQUATELY CORRECT THE PROBLEM, CONTACT THE SERVICE DEPARTMENT FOR ADDITIONAL ASSISTANCE.**

VII) ERROR REFERENCE GUIDE

The following table outlines the errors that may occur during processing.

**** Consult the troubleshooting guide (p. 62) for additional information and solutions to resolving the error state**

<i>Alarm Number</i>	<i>Error</i>	<i>Cause</i>
1	Blade not retracted	Sensor did not pick up that blade retracted after cut
2	Blade not extended	Sensor did not pick up that blade extended before cut
3	Cutter did not raise	Sensor did not pick up cutter raising after blade extended
4	Cutter did not lower	Sensor did not pick up cutter slide lowering to cut bag
5	Inside cutter not retracted	Sensor towards rear of cutter cylinder beneath cabinet did not detect inside bumper retracted after cut
6	Inside cutter not extended	Sensor towards front of cutter cylinder beneath cabinet did not detect engagement of bumper before cut
7	Outside cutter not retracted	Sensor toward front of cutter cylinder inside cabinet did not detect outside bumper retracted after cut
8	Outside cutter not extended	Sensor towards rear of cutter upper cylinder inside cabinet did not detect engagement of bumper before cut
9	Cutter not home	Sensor towards rear of cutter cylinder beneath cabinet or sensor towards front of cutter cylinder inside cabinet did not detect position before belt advanced
11	Fill station not home	Fill station not raised sensor not detected before belt advanced
12	Fill station did not raise	Fill station upper sensor did not detect after filling
13	Fill station did not lower	Fill station lower sensor did not detect before filling
14	Pump error during filling	Pump axis error during pumping, refer to axis error codes
15	Pump time out	Pump timed out during fill cycle, refer to axis error codes
16	Error during axis halt	Pump motor error during stop, refer to axis error codes
17	Pump motor error during power up	Pump motor did not power on during start-up
18	Pump homing error	Pump motor did not home
20	Sealer not home	Sealer retract sensor not detected before belt advance
21	Heat sealer temperature low	Sealing anvil temperature is more than eight percent under set temperature

<i>Alarm Number</i>	<i>Error</i>	<i>Cause</i>
23	Sealer did not extend	Sealer extend sensor did not detect extend before sealing
24	Sealer did not retract	Sealer retract sensor did not detect retract after sealing
25	Temperate sensor input error	No temperature sensor detected
30	Real time clock error	Error receiving time information from the CPU for printer setup
31	Com port initialization error	Communication port with printer failed to open
32	Com port get buffer error	Error acquiring buffer for printer communication port
33	Com port write buffer error	Error writing buffer to printer
34	Release send buffer error	Error releasing buffer after write to printer error
35	Com port close error	Error closing communication port after labeling function is disabled
36	Printer set up timed out	Timed out during printer setup
38	Send label information to printer timed out	Communication with printer timed out
39	No label detected at printer	Vacuum sensor did not detect label on pad of label arm
41	Label arm did not extend	Label arm lower sensor did not detect extend during label printing or applying to film
42	Label arm did not retract	Label arm upper sensor did not detect retract after picking up label or after applying to film
43	Label arm did not rotate up	Label arm sensor did not detect rotate up to apply label
45	Label arm not in home position	Label arm not detected in retracted and rotated down position
50	Index motor timed out	Transport belt advance timed out, refer to axis error code
52	Index axis error prior to advance	Index axis error present before move was made
53	Index motor advance error	Index axis error occurred while transport belt in motion, refer to axis error code
54	Index motor power on error	Error occurred when transport belt motor powered on, refer to axis error code
57	Index homing error	Index error during homing
58	Index out of position	Index encoder position does not match requested position
59	Film out of place	Film position sensor indicates film in front of sensor

VIII) WARNING REFERENCE GUIDE

The following section outlines system warnings to indicate to the user potential problems that may cause errors during processing.

<i>Alarm Number</i>	<i>Warning</i>	<i>Description</i>
0	Heat sealer temperature low	Temperature of the heat sealer is too low
1	Heat sealer temperature high	Temperature of the heat sealer is too high
2	Distribution block overload	MICO block 1 or 2 has an overloaded circuit
3	80VDC Power Supply not ready	Power supply for motors not providing power to motors
6	I/O module missing	I/O rack module not communicating or disconnected from
15	XV module present	Valve module not communicating
16	XV module power supply error	Valve module power supply error
17	XV module overload	Valve module drawing excessive current
18	X20 Bus supply error – module 1	Bus supply error for X20PS9400 module
19	X20 I/O power supply error – module 1	Power supply error for X20PS9400 module
20	HMI battery missing or low	Battery in operator interface not detected
21	Bus supply error – module 9	Bus supply error for X20BT9400 module
22	I/O power supply error – module 9	Power supply error for X20BT9400 module
29	CPU temperature high	The temperature of the HMI CPU is too high
30	Environment temperature too high	Temperature inside cabinet of HMI is too high
31	Powerlink communication cycle error	Error occurred during powerlink communication cycle of I/O modules
32	Powerlink communication sync error	Error occurred during powerlink communication cycle of I/O modules
35	Module 7 output error	Module 7 not functioning properly
36	Module 8 output error	Module 8 not functioning properly
37	PID controller error	Error during heat sealer temperature control
38	COM Start bit error	Error occurred during communication with printer
39	COM Stop bit error	Error occurred during communication with printer
40	COM Parity error	Error occurred during communication with printer
41	COM Rx overrun	Error occurred during communication with printer

IX) MODULE INFORMATION

The following system information screens provide status and information regarding the controls and HMI.

Screen	Notes
<div data-bbox="99 478 779 970"> <div> <div>System Information</div> <div> <div>IP Address192.168.1.145</div> <div>Module ID46723</div> <div>Serial Number168447</div> <div>System Time2098524739</div> <div>Operating Hours20</div> <div>Power Cycles24</div> <div>Battery Status1</div> <div>CPU Temp50.0 °C</div> <div>Envir. Temp35.0 °C</div> </div> <div> <div>Hr00</div> <div>Min00</div> <div>Mon0</div> <div>Day0</div> <div>Yr0000</div> </div> <div> <div>Set RTC</div> <div>0</div> </div> </div> <div> <div> <div>←</div> <div>→</div> <div>🏠</div> <div>🔔</div> </div> <div> <div>Logged in as: Supervisor</div> </div> </div> </div>	
<div data-bbox="99 1003 779 1476"> <div> <div>PowerLink</div> <div> <div>Node Number0</div> <div>Cycle Count1203351</div> <div>Idle Time1458</div> <div>Cycle Time Violations0</div> <div>Failed Cycles0</div> </div> <div> <div>Cycle OK</div> <div>Sync OK</div> </div> </div> <div> <div> <div>✖</div> <div>Cycle Count1201078</div> </div> <div> <div>2</div> <div>Break Count0</div> </div> <div> <div>✖</div> <div>Sync Error0</div> </div> <div> <div>✖</div> <div>Async Error0</div> </div> </div> <div> <div> <div>←</div> <div>→</div> <div>🏠</div> <div>🔔</div> </div> <div> <div>Logged in as: Supervisor</div> </div> </div> </div>	

Bus Controller

Present

Module ID	7966		
Serial Number	268806		
Hardware	1		
Firmware	150	Eth1 Lost	0
Tx Collision	0	Eth2 Lost	0
Rx Lost	0		
Rx Oversize	0		
Rx Overflow	0		
Rx CRC Error	0		

Link

1

Link

2



Logged in as:
Supervisor

X20 Power Supply

Present

Module ID	8076
Serial Number	370313
Hardware	6
Firmware	784
Bus Voltage	5.3 V
Bus Current	0.6 A

Bus
Supply

I/O
Supply



Logged in as:
Supervisor

X20 RTD

Present

Module ID	7078
Serial Number	187841
Hardware	6
Firmware	801
Cycle Count	167
Status1	0
Input 1	174.10 °C



Logged in as:
Supervisor

[illegible][illegible][illegible]

Bus Transmitter

Module ID 41528 **Present**





Serial Number 175202 **Bus Supply**

Hardware 5 **I/O Supply**

Firmware 784

Bus Voltage 19.9 V

Bus Current 1.5 A





 Logged in as:
Supervisor

ACOPOS Drive





Module ID 42881 **Present**

Serial Number 168996 Index Encoder -24999

Hardware 2 Pump Encoder -30415

Firmware 9

Enabled **Drive 1 OK** **Encoder 1 OK** **CPU Power**
Encoder Power **Drive 2 OK** **Encoder 2 OK** **UZX OK**





 Logged in as:
Supervisor

XV Module





Module ID 7399 **Present**

Serial Number 170150 **Pwr** **OvrLd**

Hardware 6 **CtEx** **2** **3**


Firmware 897 **CtDn** **CtUp** **FiDn** **FiUp**


4 **BIEx** **6** **Seal** **12** **LaRo** **14** **LaEx** **16** **Vacu**
18 **Blow** **20** **21** **22**






 Logged in as:
Supervisor


X67 MM 1 Present

Module ID	4881
Serial Number	254891
Hardware	6
Firmware	896



Blade Ret



Blade Ext



Blade Up






Blade Dn


In Cut Ret


In Cut Ext






Out Cut Ext



Bag Pos








Logged in as:
 Supervisor


X67 Interface Present




Module ID	43279	<div style="display: flex; flex-wrap: wrap;"> <div style="margin: 5px;"></div> <div style="margin: 5px;"></div> <div style="margin: 5px;"></div> <div style="margin: 5px;"></div> </div>
Serial Number	168638	
Hardware	1	
Firmware	2	


Reset


Reset


Reset


Reset

Logged in as:
 Supervisor

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For more information, contact (877) 270-1250

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XII) APPENDIX

12.1 Axis error Reference Guide

The following table is a list of axis error codes to reference in the case of pump or index errors.

Error ID	Error Text	Notes
1	Invalid parameter ID	
2	Data block for upload is not available	
3	Write access for a read-only parameter	
4	Read access for a write-only parameter	
8	Data block read access already initialized	
9	Data block write access already initialized	
10	Data block read access not initialized	
11	Data block write access not initialized	
16	The data segment is already the last when reading the data block	
17	The data segment is already the last when writing the data block	
18	The data segment is not yet the last when reading the data block	
19	The data segment is not yet the last when writing the data block	
21	Check sum after data block write is invalid	
23	Parameter ID in data block is invalid (data block write)	
25	Burn system module only allowed immediately after download	
27	Operating system not able to be started (operating system is not on the FEPROM)	
40	Value of parameter higher than maximum value	
41	Value of parameter higher than maximum value	
42	Value of parameter higher than maximum value	
52	Value of parameter lower than minimum value	
53	Value of parameter lower than minimum value	
54	Value of parameter lower than minimum value	
64	Hardware ID in BR module is invalid (data block write)	
65	Hardware version in BR module is invalid (data block write)	
66	The operating system on the drive is incompatible to the existing network	
67	Necessary parameter is missing or is invalid	
68	Data block length invalid	
69	Command interface is occupied	
70	Value of a necessary parameter too high	
71	Value of a necessary parameter too low	
1001	Error-FIFO overflow	
1002	Parameter outside the valid range	

Error ID	Error Text	Notes
1003	Parameter cannot be written while loop control is active	
1004	Timeout in network life sign monitor	
1005	Parameter cannot be written while a movement is active	
1006	Invalid parameter for trigger event (digital input + edge)	
1007	Master for network coupling deactivated - one master is already sending	
1008	Master for network coupling deactivated - Encoder error	
1009	Error during memory allocation	
1011	Quickstop input active	
1012	Breakdown of cyclic network communication	
1013	Station is not available for network communication	
1014	Network command interface is occupied	
1016	Maximum cycle time exceeded - CPU load too high	
1017	Invalid parameter ID for cyclic read access	
1018	Invalid parameter ID for cyclic write access	
1021	Parameter cannot be written: Function block active	
1022	Timeout in life sign monitoring of cyclic data to drive	
1023	Network coupling with the cyclic communication mode not allowed	
1024	Cyclic communication mode with current network configuration not possible	
2001	Upload of trace data not allowed: Recording active	
2003	Trace start not allowed: Recording active	
2006	Initialization of trace parameters not allowed: Recording active	
4005	Controller cannot be switched on: Drive in error state	
4007	Lag error stop limit exceeded	Motor slipped during motion, check for drag
4008	Positive limit switch reached	
4009	Negative limit switch reached	
4010	Controller cannot be switched on: Both limit switches are closed	
4011	Controller cannot be switched off: Movement active	
4012	Controller cannot be switched on: Init parameters missing or not valid	
4014	Two encoder control: Stop limit of positions difference exceeded	
5001	Target position exceeds positive SW limit	
5002	Target position exceeds negative SW limit	
5003	Positive SW limit reached	
5004	Negative SW limit reached	
5005	Start of movement not possible: Position controller inactive	
5006	Start of movement not possible: Axis not referenced	
5010	Move in pos. direction not possible: Pos. limit switch is closed	
5011	Move in neg. direction not possible: Neg. limit switch is closed	
5012	Start of movement not possible: Stop ramp active	

Error ID	Error Text	Notes
5013	Cyclic set value mode cannot be switched on: Movement active	
5015	Start of movement not possible: Homing procedure active	
5016	Parameter cannot be written: Homing procedure active	
5017	Homing procedure mode not possible: Position controller inactive	
5018	Homing procedure not possible: Movement active	
5019	Homing parameter outside the valid range	
5020	Homing procedure not possible: Both limit switches are closed	
5021	Limit switch closed: No direction change for this homing mode	
5022	Second limit switch signal received: Reference switch not found	
5023	Incorrect limit switch signal received for current movement direction	
5024	Cyclic set value mode aborted: Set positions missing	
5025	Homing offset with counting range correction cannot be set	
5026	Basis movement parameters (with override) exceed speed limit value	
5027	Basis movement parameters (with override) exceed acceleration limit value	
5028	Current movement is not a basis movement	
5029	Trigger ignored - remaining distance exceeds SW limit	
5030	Homing procedure mode not possible: Position controller active	
5031	Homing procedure mode not possible: Cyclic set values mode is off	
5032	Acceleration too low - braking distance exceeds positive SW limit	
5033	Acceleration too low - braking distance exceeds negative SW limit	
5034	Homing procedure not possible: Encoder error	
5035	Reference marks not detected	
5036	Acceleration stop limit exceeded	
5101	Cam profile compensation gears: Limit values exceeded	
5102	Too many changes of cam profile per cycle (master period too short)	
5103	Slave trigger FIFO full	
5104	Slave trigger FIFO empty	
5105	Master trigger FIFO full	
5106	Master trigger FIFO empty	
5107	Cam coupling cannot be started: Parameter outside the valid range	
5108	Master compensation trigger FIFO full	
5109	Master compensation trigger FIFO empty	
5110	Cam coupling aborted: Cyclic set positions missing	
5111	Cam coupling aborted: Encoder error	
5112	Command not allowed: Cam profile coupling not active	

Error ID	Error Text	Notes
5113	Command not allowed: Controller is already active	
5114	Parameter cannot be written: Cam coupling active	
5115	Restart command not possible: The cam automat is not active	
5201	Parameter cannot be written: Drumsequencer active	
5202	Cam Control: Switch positions not in ascending order	
5300	Data block for upload is not available	
5301	Start cam automat linkage not possible: Parameter outside the valid range	
5302	Parameter cannot be written: Cam automat active	
5303	Cam profile data not available at index	
5304	Format error in cam profile data	
5311	Cam automat: Event leads to non initialized state	
5315	Download error: Cam profile data in use by cam automat or function block	
5316	Event type is not possible for entry in compensation gears	
5319	Cam profile data not allowed for state 0	
5329	No valid cam profile data or state deactivated	
6000	Master sampling time is not a multiple of position controller sampling time	
6001	Sync controller: Timeout for sync telegram occurred	
6002	Sync controller: Error tolerance of system time difference exceeded	
6008	Controller is already active	
6011	Controller is not in speed mode	
6014	Drive initialization active	
6015	CAN controller: CAN bus disturbance (receive error counter greater 96)	
6016	CAN controller: CAN bus disturbance (transmit error counter greater 96)	
6017	Software: Watchdog active	
6018	Hardware: 15V power supply fail	
6019	ACOPOS: Overcurrent	
6020	Hardware: 24V power supply fail	
6021	Low level at controller enable input	
6023	Voltage sag at controller enable input	
6024	Current was latched before conversion (OpSys error in ABLs)	
6025	Temperature was latched before conversion (OpSys error in ABLs)	
6026	Holding brake: Stator current limit exceeded during release	
6027	Holding brake: Manual operation not permitted	
6028	Holding brake: Undervoltage/-current (wire breakage, check 24V supply)	
6029	Holding brake: Control signal on and output status off	
6030	Holding brake: Brake output is active, but no brake entered in motor data	

Error ID	Error Text	Notes
6031	System module already deleted	
6032	Interface: FPGA configuration error	
6033	Type of servo amplifier is not supported by ACOPOS-firmware	
6034	Cyclic set value mode aborted: Set speeds missing	
6036	Motor parameters missing or invalid	
6038	Torque limit higher than peak motor torque	
6040	Operating system version is less than allowed minimum version	
6041	Operating system version is greater than allowed maximum version	
6042	Operating system version is not in the allowed range	
6043	PHASING_MODE is not valid	
6044	Phasing: Rotational direction or position not valid	
6045	Power stage: Connection X5: No current flow	
6046	Phasing: No rotor movement	
6047	Holding brake: Control signal off and output status on	
6048	Motor holding brake movement monitor: Position error too large	
6049	Power stage: Connection X5: Current measurement faulty	
6050	Write parameter not allowed: Set current filter or notch filter active	
6051	Phasing: Speed too high	
6052	Power stage: High-side: Overcurrent	
6053	Power stage: Low-side: Overcurrent	
6054	Power stage: Overcurrent	
6055	Holding brake: Low voltage	
6056	Holding brake: Low current	
6057	Position loop controller: Load encoder error	
6058	Enable1: Voltage sag	
6059	Enable2: Voltage sag	
6060	Power stage: Limit speed exceeded	
6061	CTRL Speed controller: Limit speed exceeded	
6062	CTRL Speed controller: Speed error stop limit exceeded	
6063	Holding brake: External voltage on output over 24V	
7012	Encoder: Hiperface error bit	
7013	Encoder: Status message	
7014	Encoder: CRC error during parameter transfer	
7015	Encoder: Timeout error during parameter transfer	
7016	Encoder: Busy error during parameter transfer	
7017	Encoder: Error while reading encoder parameter	
7020	OEM data: Data write error	
7021	Encoder: Timeout error while reading absolute position	
7022	Encoder: Initialization is active	
7023	Encoder: Parameter transfer is active	

Error ID	Error Text	Notes
7029	Encoder: Incremental signal amplitude too small	
7030	Encoder: Incremental signal amplitude too large	
7031	Encoder: Incremental signal amplitude too large (Disturbance)	
7032	Encoder: Incremental signal amplitude too small (Disturbance, no connection)	
7033	Encoder: Incremental position step too large	
7036	Encoder: Interface ID invalid (Check slot and Interface EEPROM data)	
7038	Encoder: Position value not synchronous with absolute value	
7039	Incremental encoder: Cable disturbance track A	
7040	Incremental encoder: Cable disturbance track B	
7041	Incremental encoder: Cable disturbance track R	
7042	Incremental encoder: Edge distance of quadrature signal too small	
7043	Encoder: Cable disturbance track D	
7044	Encoder: Parity	
7045	Resolver: Signal disturbance (plausibility check)	
7046	Resolver: Cable disturbance	
7047	Invalid distance of reference marks	
7048	Error during the reading of encoder memory	
7049	Abnormal encoder current consumption	
7050	Incremental encoder: Illegal AB signal change	
7051	Encoder: Acceleration too large (Disturbance)	
7052	Encoder: Encoder is not Supported	
7100	Parameter function not supported. (Module ?)	
7200	DC bus: Overvoltage	
7210	DC bus: Charging: Voltage unstable	
7211	DC bus: Voltage drop	
7212	DC bus: High voltage drop	
7214	DC bus: Charging resistor hot (too many power line fails)	
7215	Power mains: At least one phase of the power line failed	
7217	DC bus: Nominal voltage detection: Voltage too high	
7218	DC bus: Nominal voltage detection: Voltage too low	
7219	DC bus: Charging: Voltage too low	
7220	DC bus: Nominal voltage detection: Voltage not allowed	
7221	Mains: Failure	
7222	Power stage: Connection X5: Ground fault	
7223	DC bus: Overvoltage DC-GND	
7224	Connector to back plane: 24V-GND contact monitoring: Voltage too low	
7225	DC bus: Overvoltage	
7226	DC bus: Overcurrent	
7227	Bleeder: Overcurrent	

Error ID	Error Text	Notes
7300	Digital IO: IO Configuration invalid	
7401	Parameter position exceeds maximum data length	
7402	Processing of parameter sequence aborted: Write error	
7403	Processing of parameter sequence is still active	
7404	Parameter sequence not available at index	
8001	EEPROM select not valid	
8003	Table index not valid	
8004	EEPROM variable type not valid	
8005	EEPROM type not valid	
8006	Value of EEPROM parameter is zero	
8007	Value of EEPROM parameter is not valid	
8020	Invalid switch frequency	
9000	Heatsink temperature sensor: Overtemperature - Movement stopped	
9001	Heatsink temperature sensor: Overtemperature - Limiter active	
9002	Heatsink temperature sensor: Not connected or destroyed	
9003	Heatsink temperature sensor: Not connected or destroyed	
9010	Temperature sensor (Motor Choke External): Overtemperature	
9011	Temperature sensor (Motor Choke External): Overtemperature - Limiter active	
9012	Temperature sensor (Motor Choke External): Not connected or destroyed	
9013	Temperature sensor (Motor Choke External): Short circuit	
9030	Junction temperature model: Overtemperature - Movement stopped	
9031	Junction temperature model: Overtemperature - Limiter active	
9040	Bleeder temperature model: Overtemperature - Movement stopped	
9041	Bleeder temperature model: Overtemperature - Limiter active	
9050	ACOPOS peak current: Overload - Movement stopped	
9051	ACOPOS peak current: Overload - Limiter active	
9060	ACOPOS continuous current: Overload - Movement stopped	
9061	ACOPOS continuous current: Overload - Limiter active	
9070	Motor temperature model: Overload - Movement stopped	
9071	Motor temperature model: Overload - Limiter active	
9075	ACOPOS continuous power: Overload - Movement stopped	
9076	ACOPOS continuous power: Overload - Limiter active	
9078	ACOPOS temperature sensor: Overtemperature - Movement stopped	
9079	ACOPOS temperature sensor: Overtemperature - Limiter active	

Error ID	Error Text	Notes
9300	Current controller: Overcurrent	
10000	Identification parameter(s) missing	
10001	Parameter identification: Invalid sub-mode	
10100	Parameter identification: Quality factor not fulfilled	
10101	No ISQ-filter free	
10102	No resonance-frequency for ISQ-filter (band-stop) found	
29200	The axis object is invalid	
29203	Drive is not ready	
29204	Invalid parameter number	
29205	The axis is not homed	
29206	The controller is off	
29207	This movement type is currently not allowed	
29208	The axis object was changed since last FB call	
29209	The drive is in error state	
29210	Parameter initialization (Global-init) failed	
29211	Switching the motor holding brake not possible, Controller is on	
29214	Homing not possible	
29215	Continuous movement not possible	
29217	Invalid input parameter	
29218	Unknown PLCopen axis state	
29219	Invalid PLCopen parameter value	
29221	No cam name	
29222	Error at cam download	
29225	The target position is outside the axis period	
29226	Error on drive. Use MC_ReadAxisError for details	
29227	No further master position can be sent on the network from this drive	
29228	No further master position can be read from the network on this drive	
29229	Synchronized movement not possible	
29230	Internal error: Error at parameter list transfer	
29231	The master velocity is invalid, 0 or negative	
29232	Internal error: Invalid SPT resource type	
29233	SPT resource of required type not available	
29234	Internal error: Number of requested SPT resources not available	
29235	The functionality is not available for the current axis type	
29237	Error in TriggerInput parameters	
29238	The FB cannot be used in the current state	
29239	This functionality is not available on CAN-Bus	
29241	Wrong data type for specific ParID	
29242	Cyclic read data full	
29246	TouchProbe window invalid	

Error ID	Error Text	Notes
29247	Master sync position cannot be reached	
29250	CamTableID is invalid	
29251	Error at parameter table download	
29252	Error at parameter list initialization	
29253	Error at parameter sequence download	
29254	Error at parameter sequence initialization	
29255	Initialization not possible, axis coupling is active	
29256	Multiple commands not possible at the same time	
29257	The specified data address is invalid	
29260	No data object name specified	
29261	Invalid data object index	
29263	Slave channel already in use	
29264	Cyclic write data full	
29265	Communication to drive failed	
29266	The MasterParID was changed since last FB call	
29267	Invalid number of cam profile polynomials	
29268	FB aborted by another one	
29269	Error during saving of the NC-INIT parameter module	
29270	Error during loading of the NC-INIT parameter module	
29271	Selected MC_TouchProbe function block is not active	
29272	Error at initialization of Automat	
29273	The given "Subject" is invalid	
29274	Error at initialization of parameters. Use MC-ReadAxisError for details	
29275	At least one input value was changed while "Enable = TRUE"	
29276	A phase shift is already in progress	
29277	An offset shift is already in progress	
29278	Selected mode not supported without entry of a period	
29279	Output value cannot be calculated	
29280	No valid master defined	
29281	This functionality is not available for ACOPOSmulti drives	
29283	Master or slave position of first cam profile point not equal to 0	
29284	Too few curve points	
29285	Invalid cam profile section type	
29286	Invalid mode for the last cam profile point	
29287	Invalid master or slave position for last cam profile point	
29288	Master positions are not strictly monotonic increasing	
29289	Invalid boundary parameters	
29290	Too many cam profile polynomials	
29291	Turning point outside of cam profile section	
29292	Identical slave positions not permitted	

Error ID	Error Text	Notes
29293	Specified data length is 0 or too low	
29294	Not able to determine error text. See error text string for details	
29295	An error has occurred. See “ErrorRecord” output for details	
29296	Not enough space in Broadcast channel	
29297	Problem with variable in permanent memory	
29298	Erro in network configuration	
29299	Error occurred during the setup operation	
29300	Invalid number of polynomials in the cam	
29301	No cam value can be calculated	
29302	One instance of the function block is already active	
29303	Specified IntervalTime too small	
29304	This functionality is not available for ACOPOS	
29305	ParID cannot be read in this mode	
29306	Invalid interpolator mode	
29307	Master period is zero	
29308	Internal calculation error	
29309	General internal error	
29489	Internal values of the axis structure are invalid	
29490	Error at internal initialization (global init)	
29491	Error at internal initialization (software limits)	
29492	Error at internal initialization (homing of virtual axis)	
29498	ACP10_MCLibrary: Initializaiton aborted	
29499	ACP10_MCLibrary: Error with details in “ASCII Data”	
31201	Di/Do Interface: Drive not ready	
31220	Encoder error: Encoder not configured	
31221	Encoder error: Cable disturbance or signal disturbance	
31224	Encoder Interface: HW Module not OK	
31240	Homing procedure mode not allowed with current HW Type	
31247	Drive Interface: DrvOK not set from HW Module	
31248	Trigger Interface: HW Module not OK	
31249	Drive Interface: HW Module not OK	
31250	Di/Do Interface: HW Module not OK	
31260	Current axis configuration only possible in simulation mode	
32001	Error calling CAN_xopen()	
32002	Error defining Write COB for Broadcast Command	
32003	Error defining Write COB for Parameter Read Request	
32004	Error defining Write COB for Parameter Write Request	
32005	Error defining Read COB for Parameter Read Response	
32006	Error defining Read COB for Parameter Write Response	
32007	Error defining Read COB for Monitor Data from the drive	

Error ID	Error Text	Notes
32008	Error sending Read Request (network error ?)	
32009	Error sending Write Request (network error ?)	
32010	Drive not responding to Read Request (is the drive in the network ?)	
32011	Drive not responding to Write Request (is the drive in the network ?)	
32012	Error reading module description of system module	
32013	No operating system present on the drive	
32014	Operating system version on the drive not compatible with NC manager version	
32015	Error creating message queue	
32016	Error sending an idle time command to the NC Manager Task	
32017	Wrong boot state after start of operating system	
32018	Invalid Parameter ID in system module	
32019	Download of NC system module not allowed (the module is on the PLC)	
32020	System module data could not be read from the drive during NC manager INIT	
32021	System module data could not be read from the drive after download	
32022	Error aborting data block access before download	
32023	Error reading boot state before download	
32025	Wrong boot state after SW Reset before download	
32026	Error during INIT of data block write access for download	
32027	Error sending data segment for download	
32029	Response error after sending data segment for download	
32030	Error at command for system module burn after download	
32031	Error reading status for system module burn after download	
32032	Error while burning system module after download	
32033	Timeout while burning system module after download	
32034	Error at SW Reset before download	
32035	Error at SW Reset after download	
32036	Different system module data after download	
32037	Error message(s) lost because of FIFO overflow (acknowledge errors)	
32038	Error searching for INIT parameter module	
32039	Error reading INIT parameter module	
32040	Version of INIT parameter module is not compatible to NC manager	
32041	The module acp10cfg does not exist	
32042	The module acp10cfg is not an NC data module	
32043	The NC module type of the module acp10cfg is invalid	
32044	The NC module type of the module acp10cfg cannot be read	
32045	The data address in module acp10cfg cannot be read	

Error ID	Error Text	Notes
32046	The data section of module acp10cfg is empty	
32047	A CAN node number in module acp10cfg is invalid	
32048	A CAN node number in module acp10cfg is used repeatedly	
32049	This NC action is not allowed during Trace is active	
32050	A Trace Data Upload is already active	
32051	Invalid Trace Status for Trace Data Upload	
32053	Error defining Write COB for Parameter Read Request 2	
32054	Error defining Write COB for Parameter Write Request 2	
32055	Error defining Read COB for Parameter Read Response 2	
32056	Error defining Read COB for Parameter Write Response 2	
32057	Error accessing HS task class table	
32058	Error accessing task class table	
32059	Parameter tk_no invalid for access to task class table	
32060	Timeout for cyclic data from drive - Indications invalid (network error ?)	
32061	Timeout sending a Read Request telegram (network error ?)	
32062	Timeout sending a Write Request telegram (network error ?)	
32063	Data address zero (set/read parameter via service interface)	
32064	Convert text into binary data is not possible for this parameter data type	
32065	Convert binary data into text is not possible for this parameter data type	
32066	Parameter ID zero (set/read parameter via service interface)	
32067	Parameter ID invalid (set/read parameter with option ncDATA_TEXT)	
32069	The data address of the ACOPOS parameters in module acp10cfg cannot be read	
32070	Drive for ACOPOS parameters in module acp10cfg not found	
32071	The ACOPOS parameters are invalid (an update of AutomationStudio is necessary)	
32072	Wrong boot state after SW Reset	
32073	Download of NC system module: Error reading NC hardware version of BsLoader	
32074	Incompatible NC hardware version: Download of BsLoader not possible	
32075	Incompatible NC hardware version: Download of operating system not possible	
32076	FIFO for messages with high priority to NC Manager Task is full	
32077	A POWERLINK node number in module acp10cfg is invalid	
32078	A POWERLINK node number in module acp10cfg is used repeatedly	
32079	With this version one CAN interface must be in module acp10cfg	

Error ID	Error Text	Notes
32080	With this version one POWERLINK interface must be in module acp10cfg	
32081	With this version only one POWERLINK interface is allowed in module acp10cfg	
32082	Module acp10cfg contains a CAN interface without any drive node	
32083	Module acp10cfg contains a POWERLINK interface without any drive node	
32084	The NC configuration does not contain any ACOPOS module	
32085	Module acp10cfg invalid (AutomationStudio V2.2 or higher necessary)	
32086	With this version no CAN interface is allowed in module acp10cfg	
32087	With this version no POWERLINK interface is allowed in module acp10cfg	
32088	The INIT parameter module specified in the NC Mapping Table does not exist	
32089	NC-HW-ID of INIT parameter module is not compatible to NC manager	
32090	NC object type of INIT parameter module is not equal to NC object	
32091	Invalid block data in INIT parameter module (data range exceeded)	
32092	Error sending a command to the NC Idle Task	
32093	NcManCtrl is defined repeatedly with different values	
32094	NetworkInit is defined repeatedly for ncMANAGER with different values	
32095	Value of drive group in CAN-CFG-Module higher than maximum value	
32096	Size of data buffer for trace data upload in module acp10cfg too small	
32097	All counts of used network interfaces in module acp10cfg are zero	
32098	Version of the module acp10cfg is not compatible with NC manager	
32099	Length of data section of module acp10cfg is too small	
32100	Memory for NC error text management cannot be allocated	
32101	Error accessing NC error text module in BR module table	
32102	Version ID of error text module not equal to that of NC manager	
32103	Data section of error text module cannot be read	
32104	Data section of error text module is empty	
32105	Length of data section of error text module is too small	
32106	Error list of error text module not equal with that of NC manager	
32107	Parameter list of error text module not equal with that of NC manager	
32108	The last error number of error text module is not equal to 65535	
32109	The last parameter ID of error text module is not equal to 65535	
32110	Length of data section of CAN-CFG-Module cannot be read	

Error ID	Error Text	Notes
32111	Length of data section of CAN-CFG-Module is too small	
32112	The data address in the CAN-CFG-Module cannot be read	
32113	The enable code in the CAN-CFG-Module is invalid	
32114	Values not equal to zero in reserved area of CAN-CFG-Module	
32115	The basis CAN ID for WR/RD channel1 in the CAN-CFG-Module is invalid	
32116	The basis CAN ID for WR/RD channel2 in the CAN-CFG-Module is invalid	
32117	The basis CAN ID for WR/RD channel3 in the CAN-CFG-Module is invalid	
32118	The basis CAN ID for monitor data in the CAN-CFG-Module is invalid	
32119	Invalid basis CAN ID for cyclic data to the drive in CAN-CFG-Module	
32120	Invalid basis CAN ID for cyclic data from the drive in CAN-CFG-Module	
32121	The CAN ID for the SYNC telegram in the CAN-CFG-Module is invalid	
32122	The CAN ID for the broadcast command in the CAN-CFG-Module is invalid	
32123	Error defining Read COB for WR2 Request (external set position mode)	
32124	Error defining Read COB for WR2 Response (external set position mode)	
32125	Error defining Read COB for RD2 Request (external set position mode)	
32126	Error defining Read COB for RD2 Response (external set position mode)	
32127	Error deleting Write COB for Broadcast Command (external set position mode)	
32128	Error defining Read COB for Broadcast Command (external set position mode)	
32129	Error defining Read COB for cyclic user data from drive (ext. set pos. mode)	
32130	This external set position mode is only allowed with one CAN interface	
32131	The specified NC data module does not exist	
32132	The specified module is not an NC data module	
32133	The NC module type of the specified NC data module is invalid	
32134	The NC module type of the specified NC data module cannot be read	
32135	The data address of the specified NC data module cannot be read	
32136	The Data section of the specified NC data module is empty	
32137	Data address of structure for a data block operation is zero	
32138	Data address zero (user data for data block operation)	
32139	Data length zero (user data for data block operation)	
32140	Data block operation: Data module name or data address must be zero	
32141	Invalid data format in a parameter sequence	

Error ID	Error Text	Notes
32142	ID or type of a parameter invalid in parameter sequence with text format	
32143	Data of a parameter in a parameter sequence longer than 6 bytes	
32144	Error for an ACOPOS Parameter Table specified in the NC Mapping Table	
32145	The ACOPOS Parameter Table does not exist	
32146	The ACOPOS Parameter Table is not an NC data module	
32147	The NC module type of the ACOPOS Parameter Table is invalid	
32148	The NC module type of the ACOPOS Parameter Table cannot be read	
32149	The data address in the ACOPOS Parameter Table cannot be read	
32150	The data section of the ACOPOS Parameter Table is empty	
32151	Error initializing memory buffer for XML parser	
32152	No XML elements present in an ACOPOS Parameter Table	
32153	The first XML element is invalid in the ACOPOS Parameter Table	
32154	The ACOPOS Parameter Table does not contain any ACOPOS parameters	
32155	Nesting depth for ACOPOS parameter groups exceeded	
32156	ID or type of an ACOPOS parameter invalid for text conversion	
32157	Length of parameter data too large for ACOPOS parameter in XML data	
32158	ACOPOS parameter: An attribute is not defined (ID)	
32159	ACOPOS parameter: An attribute is not defined (Value)	
32160	Basis movements with mode ncTRG_STOP are not allowed for ncV_AXIS	
32161	ncNC_SYS_RESTART,ncACKNOWLEDGE is not allowed (network.init=ncFALSE)	
32162	Internal task class number wrong (from now on operation is blocked !!!)	
32163	A system module download to all drives is not possible with SwNodeSelect	
32164	The text defined with NetworkInit (global) is invalid	
32165	A CAN node number is equal to NodeNr_SwNodeSelect	
32166	Network initialization during active network initialization not allowed	
32167	The text defined with NetworkInit is invalid	
32168	NodeNr_SwNodeSelect is defined repeatedly with different values	
32169	The node number defined with NodeNr_SwNodeSelect is invalid	
32170	A data module name has to be entered for this data block operation	
32171	Index zero is not allowed (user data for data block operation)	
32172	The specified data module name is not valid for a BR module	
32173	Memory for data module creation cannot be allocated	

Error ID	Error Text	Notes
32174	Error with installation of data module into BR module table	
32175	Error with installation of data module into BR module table	
32176	Text for parameter data too large for parameter sequence with text format	
32177	Text for parameter data too large for parameter list with text format	
32178	This NC object is not enabled for this ACOPOS (channel number too high)	
32179	ID or type of a parameter invalid in parameter list with text format	
32180	Data address of structure for a parameter list operation is zero	
32181	Data address zero (user data for parameter list operation)	
32182	Data length zero (user data for parameter list operation)	
32183	Data length invalid (user data for parameter list operation)	
32184	Invalid data format in a parameter list	
32185	Data of a parameter in a parameter list longer than 6 bytes	
32186	NetBasisInitNr is defined repeatedly for ncMANAGER with different values	
32187	Error for synchronization of network initialization (details in Logger)	
32188	This NC object is defined in hardware configuration and NC Mapping Table	
32189	Timeout for cyclic data from drive - Indications invalid (network error ?)	
32190	Error defining Write COB for selection of node number via software	
32191	This parameter ID is reserved for the PLCopen MC library	
32192	The specified data module is not an INIT Parameter module	
32193	For this NC object type no INIT parameter module is present	
32194	This function is not implemented for this NC object type	
32195	Error downloading BsLoader to ACOPOS	
32196	Error downloading operating system to ACOPOS	
32197	Error downloading BsLoader to ACOPOS (additional info in Logger)	
32198	Error downloading operating system to ACOPOS (additional info in Logger)	
32200	Error calling plAcycWrite() (read parameter)	
32201	Error calling plAcycWrite() (write parameter)	
32202	Error calling plAcycRead() (read parameter)	
32203	Error calling plAcycRead() (write parameter)	
32204	Timeout while reading par. via acyclic channel (is the drive in the network ?)	
32205	Timeout while writing par. via acyclic channel (is the drive in the network ?)	

Error ID	Error Text	Notes
32206	Cyclic channel: Read Request in spite of Wait for Response	
32207	Cyclic channel: Write Request in spite of Wait for Response	
32208	Error using plAction(DEVICE_TO_BUS_NR) (additional info in Logger)	
32209	Error using plAction(GET_IDENT) (additional info in Logger)	
32210	Wrong interface ident when calling plState() (additional info in Logger)	
32211	Interface not available when calling plState() (additional info in Logger)	
32212	Fatal interface error when calling plState() (additional info in Logger)	
32213	Timeout for POWERLINK interface (additional info in Logger)	
32214	Error calling plAcycOpen() (additional info in Logger)	
32215	Error calling plCECreate() (additional info in Logger)	
32216	Error using plAction(GET_IF_PAR) (additional info in Logger)	
32217	Broadcast channel: Error calling plAcycWrite() (read parameter)	
32218	Broadcast channel: Error calling plAcycWrite() (write parameter)	
32219	Error using plAction(GET_IF_MUXPRESCALE) (additional info in Logger)	
32220	Error using plAction(GET_IF_CYCLE_TIME) (additional info in Logger)	
32221	Error using plAction(GET_IF_PRESCALE) (additional info in Logger)	
32222	Error using plAction(GET_STATIONFLAG) (additional info in Logger)	
32223	Error calling plGetNodeInfo() (additional info in Logger)	
32224	Error calling plAction(GET_PROTOCOL_VERSION) (additional info in Logger)	
32225	This ACOPOS POWERLINK node does not exist in the AR Configuration	
32226	A SDC node number in module acp10cfg is invalid	
32227	A SDC node number in module acp10cfg is used repeatedly	
32228	There is no network interface (POWERLINK or SDC) contained in acp10cfg	
32229	The object acp10sdc does not exist (necessary for SDC NC objects)	
32230	Error at SDC initialization (see Logger)	
32231	Error at SDC configuration (see Logger)	
32232	The object acp10sim does not exist (necessary for ACOPOS simulation)	
32233	The object acp10bsl contains no NC system module	
32234	The object acp10sys contains no NC system module	
32235	Data address zero for parameter in parameter sequence	
32236	Data address zero for parameter in parameter list	

Error ID	Error Text	Notes
32237	Channel index for ACOPOS parameters in module acp1ocfg is invalid	
32238	This function is not implemented at this time	
32239	Basic memory for INIT parameter modules could not be allocated	
32240	NC object data invalid (PV with INIT value in variable declaration ?)	
32241	Data block operation: Data module name must be zero	
32242	Conditions for cam profile transfer via Systick-Task are not fulfilled	
32243	Error using plAction(GET_PDO_INFO) (additional info in Logger)	
32244	No PDO defined in the cyclic frame for this channel: NC object is disabled	
32245	The Memory for operating the broadcast channel cannot be allocated	
32246	'Direction' of the POWERLINK broadcast channel is not 'Output'	
32251	NcNetCyc: Response timeout	
32252	NcNetCyc: Unexpected Response (invalid counter value)	
32260	Trace: No valid test data point is defined	
32261	Trace trigger: The NC object is invalid	
32262	Trace test data point: The NC object is invalid	
32263	Trace trigger: The NC object is not enabled for this ACOPOS	
32264	Trace test data point: The NC object is not enabled for this ACOPOS	
32265	Trace trigger: Trace for this NC object already active at trace start	
32266	Trace test data point: Trace for this NC object already active at trace start	
32267	Trace trigger: The trace interface for this NC object is occupied	
32268	Trace test data point: The trace interface for this NC object is occupied	
32269	Trace: Too many test data points for one NC object	
32270	ACOPOS coupling: The channel number of send data is invalid	
32271	ACOPOS coupling: The channel number of receive data is invalid	
32272	ACOPOS coupling: Send data with this channel number are not configured	
32273	ACOPOS coupling: The NC object of send data is invalid	
32274	Network coupling: The broadcast channel was not configured	
32275	Network coupling: The broadcast channel was not successfully initialized	
32276	Network coupling: Cycle times not equal (network interfaces, NC task class)	
32277	Network coupling: In the broadcast channel no more data record has place	
32278	ACOPOS coupling: Zero as Parameter ID of send data is not allowed	
32279	Service interface: Data address zero	

Error ID	Error Text	Notes
32280	Timeout for enable of acyclic network communication	
32294	NC Manager error: Pointer of function nctune_sequ() is zero	
32295	NC Manager error: Data structure address zero when calling nctune_sequ()	
32296	NC Manager error: Data structure size invalid when calling nctune_sequ()	
32297	NC Manager error: NC object address zero when calling nctune_sequ()	
32298	NC Manager error: Unknown error number when calling nctune_sequ()	
32300	For controller setup the library acp10tun must be transferred to the target	
32301	Setup start not allowed: 'count.error' is greater than zero	
32302	Start setup not possible: A setup operation is already active	
32303	Setup start not possible: The axis is not global initialized	
32304	Setup start not possible: The controller is not switched off	
32305	Setup start not possible: The controller is not ready	
32306	Setup start not possible: The trace is already active	
32307	Setup for controller: Percentage for rated current higher than maximum value	
32308	Setup for controller: Percentage for rated current lower than minimum value	
32309	Setup for controller: Percentage for speed higher than maximum value	
32310	Setup for controller: Percentage for speed lower than minimum value	
32311	Setup for controller: Move distance higher than maximum value	
32312	Setup for controller: Move distance lower than minimum value	
32313	Setup start not possible with this mode: The axis is not referenced	
32314	Setup for controller: Mode invalid	
32315	Setup for controller: Mode invalid (Library)	
32316	Setup for controller: The calculated inertia is zero	
32317	Setup for controller: SCTRL_KV is zero	
32318	Setup for controller: POS_CTRL_KV is zero	
32319	Setup for controller: Calculation of result parameters was not possible	
32320	Setup for controller: Speed limit values too high for MOTOR_SPEED_RATED	
32321	Setup for controller: Coefficient a0 is zero ('+ncISQ_F1_NOTCH' not possible)	
32400	Memory cannot be allocated	
32401	No file name specified	
32402	The specified file cannot be opened	
32403	The specified file cannot be created	
32404	Error at writing into a file	
32405	Error at reading from a file	

Error ID	Error Text	Notes
32406	The specified file cannot be created	
32407	Error at writing into a file	
32408	Error at closing a file	
32409	The specified file cannot be deleted	
32410	The data object type is invalid	
32411	The address of the data object structure is zero	
32412	The name in the data object structure is zero	
32413	The data address in the data object structure is zero	
32414	The data length in the data object structure is zero	
32415	No File Device specified	
32416	The FileIO functions do not exist (is library FileIO existing ?)	
32417	Error at writing into an NC data module	
32418	No XML elements present in MTC data	
32419	MTC data: XML elements invalid or in wrong order	
32420	The MTC data contain an invalid configuration	
32421	The MTC data contain noconfiguration for Multi Axes Trace	
32422	The MTC data contain more than one configuration for Multi Axes Trace	
32423	MTC-Daten: Trigger.NcObject ist invalid	
32424	MTC-Daten: Trigger.Condition ist invalid	
32425	MTC-Daten: Channel.NcObject ist invalid	
32426	Trace trigger: The event is invalid	
32427	Trace trigger: Parameter ID zero not allowed if event unequal to OFF	
32494	AcoposSimulation=Off for one channel although activated for the other channel	
32495	AcoposSimulation: Different values defined for real and virtual axis	
32496	Error creating cyclic task for PLCopen MC (details in Logger)	
32497	Task class for handling of cyclic data with PLCopen in acp10cfg is invalid	
32498	PLCopen_CyclicData_TaskClass is lower than zero or higher than maximum value	
32499	PLCopen_CyclicData_TaskClass: Values for real and virtual axis are not equal	
32500	The Message FIFO already exists	
32501	Error creating Message FIFO	
32502	The Critical Section for Command Semaphore already exists	
32503	Error creating Critical Section for Command Semaphore	
32504	The NC Manager Idle Task already exists	
32505	Error creating NC Manager Idle Task	
32506	Error reading Taskclass Cycle Time	
32507	Error reading Taskclass Tolerance	
32508	Error sending an idle time command to the NC Manager Task	

Error ID	Error Text	Notes
32509	The Critical Section for Network Command Trace already exists	
32510	Error creating Critical Section for Network Command Trace	
32511	The Critical Section for messages with high priority already exists	
32512	Error creating Critical Section for messages with high priority	
32513	The Critical Section for global variables already exists	
32514	Error creating Critical Section for global variables	
33000	Master cycle time is not a multiple of communication cycle time	
33002	Floating-Point exception	
33003	Address error exception	
33004	Bus error exception	
33005	Exception	
33006	Access violation Exception	
33007	Violation address	
36001	Parameter limited to valid range	
36002	Total time for the position loop controller limited to prediction time	
37101	Calculated compensation distance on slave axis limited to maximum	
37102	Calculated compensation distance on slave axis limited to minimum	
37103	Slave trigger outside of window	
37104	Slave trigger missing	
37105	Master compensation trigger outside of window	
37107	Displacement actual/set position too high during 'controller switch on'	
37108	Calculated compensation distance of master axis limited to minimum	
37109	Master trigger outside of window	
37110	Master position at start higher than first trigger position	
37111	Cam profile data: Difference between polynomial value $y(x_n)$ and slave period	
37112	Polynomial within cam profile data exceeds limit value	
37113	Cam profile compensation gears: Limit values exceeded	
38000	Current controller: Motor speed is too high during switching on	
38001	Torque limiter: Limit value too high	
38003	Motor holding brake: Test torque was limited	
38004	Motor holding brake: Test torque less than load torque	
38005	Motor test: Speed is too high during switch on	
38006	Current controller: Permissible current offset values exceeded	
38007	System administration: BsLoader activ: Jumper plugged	
38008	Bleeder: No current flow	
39001	Encoder: Position correction active	

Error ID	Error Text	Notes
39002	Resolver: Speed limit for 14 bit resolution exceeded	
39003	EnDat encoder: Alarm bit is set	
39004	EnDat encoder: Alarm bit - Lighting failure	
39005	EnDat encoder: Alarm bit - Signal amplitude too small	
39006	EnDat encoder: Alarm bit - Position value contains an error	
39007	EnDat encoder: Alarm bit - Overvoltage	
39008	EnDat encoder: Alarm bit - Undervoltage	
39009	EnDat encoder: Alarm bit - Overcurrent	
39010	EnDat encoder: Alarm bit - Battery change required	
39011	EnDat encoder: Warning bit - Frequency too high	
39012	EnDat encoder: Warning bit - Temperature too high	
39013	EnDat encoder: Warning bit - Lighting reserve reached	
39014	EnDat encoder: Warning bit - Battery charge too low	
39016	Incremental encoder emulation: Frequency too high	
39017	Encoder: CRC error while reading position	
39018	Reference pulse monitoring: Faulty position, resolution, or reference pulse	
39019	Serial encoder interface: Stop bit error	
39020	Serial encoder interface: Receive data overrun	
39021	Serial encoder interface: Send data error	
39022	EnDat encoder: Warning bit is set	
39023	EnDat encoder: CRC error while reading EnDat2.2 additional information	
39024	EnDat encoder: Alarm bit - Power failure	
39025	EnDat encoder: Alarm bit - multiturn overflow	
39026	EnDat encoder: Type 3 error while reading EnDat2.2 additional information	
39027	Encoder Emulation: 5V power supply fail	
39028	Encoder: Multiturn failure	
39301	Digital IO: 24V power supply fail	
39302	Digital IO 1-4: Diagnose bit active (current, 24V supply)	
39303	Digital IO 5-8: Diagnose bit active (current, 24V supply)	
39305	Digital IO 10: Diagnose bit active (current, temperature)	
39306	Digital IO 9: Diagnose bit active (current, temperature)	
39307	Digital IO: outputs deactivated by output mask after network error	
41001	Heatsink temperature sensor: Overtemperature	
41011	Temperature sensor (Motor Choke External): Overtemperature	
41031	Junction temperature model: Overtemperature	
41041	Bleeder temperature model: Overtemperature	
41051	ACOPOS peak current: Overload	
41061	ACOPOS continuous current: Overload	
41070	Motor temperature model: Overtemperature	
41075	ACOPOS continuous power: Overload	

Error ID	Error Text	Notes
41078	ACOPOS temperature sensor: Overtemperature	
64001	ncalloc in slower task class than defined for NC Manager Task	
64002	Delay before SW Reset (network with ascending node numbers ?)	
64003	Delay before NC System Start (network with ascending node numbers ?)	
64004	The following boot error could be entered here with a delay	
64005	Timeout for parameter enable after start of operating system	
64006	Drive did not become synchronous with network master	
64007	Timeout for enable of acyclic network communication	
64008	Timeout for enable of cyclic network communication	
64009	Acp10cfg contains a POWERLINK interface, for which no axis is defined	
64010	NC software test version (validity period in Logger)	
64500	Positive speed limiter active	
64501	Negative speed limiter active	
64502	Positive direction acceleration torque limiter active	
64503	Negative direction acceleration torque limiter active	
64504	Positive direction deceleration torque limiter active	
64505	Negative direction deceleration torque limiter active	
64506	Recovery power limiter active (deceleration too high)	
65535	Response error	

12.2 Communication Error Reference Guide

Error Number	Description	
60	No message received	
8071	No buffer available in the send buffer manager	
8072	Invalid buffer rejected	
8073	Invalid I/O control code	
8078	Send buffer waiting queue full	
8079	Frame buffer with defective character	
8210	Buffer is corrupted	
8251	Device not open	
8252	Device not found	
8253	Syntax error in mode parameter string, or mode parameter not supported by the specified device	
8254	Too many devices opened at once	
8255	/PA, /DB, /SB must always be specified together	
8256	Command not supported by driver (hardware)	
8257	Required resource not available (memory, OS object, etc.)	

12.3 Heat Sealer Error Reference Guide

Error ID	Description	Notes
65534	The function block is disabled. enable = FALSE.	
12001	The integral element of the manipulated variable has reached its maximum limit.	
12002	The integral element of the manipulated variable has reached its minimum limit.	
12003	The Y_fbk input exceeds the range defined with Y_max and Y_min and has therefore been limited to this range.	
12004	The cycle time in which the LCRPIDTune() function block is called is too large. Therefore, calculated control parameters could be inaccurate. The cycle time should be less than 1/10 of the smallest time constant in the system (e.g. dead-time, delay times of PT1 or PT2).	
12005	T1 = 0. The intended PT1 functionality is reduced to purely P functionality. An intended PT2 functionality is reduced to simply PT1 functionality, if T2 > 0. If T2 should also equal 0, then the PT2 element degenerates to a true P-element.	
12007	A time parameter is too small based on the actual cycle time dt of the function block call. Since this is first determined during runtime, the affected time parameter is limited and this warning is output. More detailed information can be found in the description of the status output for the respective function block.	
12008	The A input exceeds the value range defined with Y_max and Y_min while being limited to this range.	
12009	Input Y_man exceeds the value range defined with Y_max and Y_min while being limited to this range.	
12010	T1 value entered is not larger than the corresponding task cycle time.	
12012	T2 = 0. The intended PT2 functionality is reduced to simply PT1 functionality, if T1 > 0. If T1 should also equal 0, then the PT2 element degenerates to a true P-element.	
12013	T2 value entered is not larger than the corresponding task cycle time.	
12015	Tt = 0. The intended dead-time behavior is reduced to an identical image.	
12016	Tt was entered as smaller than the corresponding task cycle time, and was automatically increased to this value.	
12017	Tt was not entered as a whole number multiple of the cycle time. Tt was set to the next lower whole-number multiple of the cycle time.	
12018	An error occurred while allocating memory for the internal ring buffer. This results in a limited dead-time functionality with Tt = 0 (i.e. only an identical image).	

Error ID	Description	Notes
12019	A change of the tuning mode is not possible and will be ignored.	
12020	Amplitude during oscillation attempt tuning is too low. Therefore, an additional switching hysteresis is used (see Data types: lcrpid_tune_osc_options_typ). This warning no longer occurs after V2.50.	
12021	No turning point detected during heating.	
12022	Values not set or set incorrectly in the lcrtemp_tune_set_typ structure were replaced by default values.	
12023	Not set or incorrectly set filter_base_T rounded up to a multiple of the task cycle time or set to the default value.	
12024	Values not set or set incorrectly in the lcrtemp_pid_set_typ structure were replaced by default values.	
12025	Invalid value for Kfbk	
12026	Invalid value for Kp.	
12027	Invalid value for Kw	
12028	Invalid value for Tf	
12029	Invalid value for Tn.	
12030	Invalid value for Tv	
12031	Invalid value for T	
12032	t_min_pulse is greater than t_period.	
12033	t:period is less than dt (= cycle time of the function block call).	
12034	Invalid value for dy_up or dy_down.	
12035	Invalid value for t_change_up or t_change_down.	
12036	Invalid value for t_impulse (>= t_change_up or t_change_down)	
12037	Y_max is less than or equal to Y_min or Y_max > 100 or Y_min < -100	
12038	Tuning aborted because request was changed before the state output was set to LCRPIDAUTOTUNE_STATE_FINISHED (50).	
12039	Error calculating controller parameters (see addInfo output).	
12040	Tuning aborted because the maximum time addPar.t_autotune_max has been exceeded.	
12041	Tuning aborted because W was changed before the state output was set to LCRPIDAUTOTUNE_STATE_FINISHED (50).	
12042	Invalid value for deadband_mode. Permitted values: 0, 1, 2.	
12043	WX_max is less than or equal to WX_min.	
12044	The dead band is greater than the range from WX_min..WX_max (deadband > (WX_max - WX_min)).	
12045	NoOfPoints is not between 2 and 1000, or ptr_table is zero, or violation of the continuity rule found.	
12046	T1 is negative. y remains 0 until T1 returns to a positive value.	
12047	T2 is negative. y remains 0 until T2 returns to a positive value.	

Error ID	Description	Notes
12048	Tt is negative. y remains 0 until Tt returns to a positive value. A new value is not applied until a positive edge on the enable input.	
31550	Invalid value for Tn.	
31551	Invalid value for base	
31552	ident invalid	
31553	Specified mode is invalid.	
31554	Parameter data indicated as invalid by LCRPIDpara().	
31556	Invalid value for d_mode.	
31557	Invalid value for dy_max.	
31558	Invalid value for fbk_mode.	
31559	Tuning aborted because an invalid request was detected.	
31560	Tuning aborted because the controlled variable X is outside the permissible range ($X < X_{\min}$ or $X > X_{\max}$).	
31561	The difference between W and X is too minor to start tuning.	
31562	Error determining the slope of the controller value.	
31563	Null pointer specified.	
31564	Y_min or Y_max was changed during tuning.	
31565	Set temperature (Temp_set) is lower than the ambient temperature.	
31566	Parameter structure (lcrtemp_set_typ) for LCRTempTune() is not connected.	
31567	In the lcrtemp_pid_opt_typ structure, an invalid value has been entered for Kp_h or Kp_c.	
31568	Parameter structure (lcrtemp_set_typ) for LCRTempPID() is not connected.	
31569	Specified mode is invalid, see LCRTempPID()	
31570	Task class invalid or not recognized.	
31571	tKnick >= tAlt was selected for aging!	
31572	Invalid internal step causes a calculation error of tAlt. Restart FBK.	
33100	The increase of the current temperature was above the specified increase ($\Delta T_{\text{sync_cool}}$) during the time frame cnt_wait_cool and the temperature has already risen to the upper temperature limit ($T_{\text{set}} + \Delta T_{\text{sync_stop}}$). The rdyToCool output is set to TRUE to make synchronization possible. If the okToCool input is not set to TRUE after 5 task cycles (FBK call), the tuning is executed anyways with the warning output LCR_WARN_LCRTEMPTune_ASYNC.	
33101	The tuning procedure will be executed immediately because the current temperature has exceeded the specified upper limit ($T_{\text{set}} + \Delta T_{\text{sync_stop}}$), even though the other zones are not yet ready for the cooling tuning. As a result, tuning of the pure cooling zones is not synchronous to the other zones.	

Error ID	Description	Notes
33102	Warning: The filter time constant Tf entered is not larger than the corresponding task cycle time.	
33150	The combination of enable_cooling and disable_heating would make a tuning procedure unnecessary.	
33151	The combination of enable_cooling and disable_heating would make regulation unnecessary.	
33152	The time constant t_ignore_dT_heat is greater than the heating time.	
33153	Error: The damping constant D is negative. y remains 0 until D returns to a positive value.	
33154	Error: The filter time constant Tf is less than or equal to 0. y remains 0 until Tf returns to a strictly positive value.	

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