



JORESTECH® MANUAL INDUCTION SEALING MACHINE

**E-IND-35/100HA/130HC**

---

**OPERATIONS MANUAL**

---

READ ALL INSTRUCTIONS CONTAINED IN THIS MANUAL PRIOR TO MACHINE INSTALLATION

## TABLE OF CONTENTS

GENERAL INFORMATION	1
GENERAL SAFETY WARNINGS	1
SPECIFICATIONS	2
OPERATION	2
Sealing Head Selection	2
Sequence of Operation	3
Control Panel	4
MAINTENANCE	4
Routine Inspection and Servicing	4
TROUBLESHOOTING	5
MACHINE PARTS AND DIAGRAMS	6
Machine Breakdown	6
Sealing Head Breakdown	7
Sealing Heads Dimensions and types	8
ADDITIONAL INFORMATION	9
Understanding Induction Sealing	9
Understanding The Results of Induction Sealing	10
Cap & Container Issues	13

## GENERAL INFORMATION

This manual covers safety precautions, parameters, machine operation, maintenance, and troubleshooting information. The machine shall only be operated by someone over the age of 18, and not under the influence of any drugs or alcohol. Any modification to the machine voids any warranty, and may cause harm to individuals using the machine while in operation.

### CHECK PACKAGE UPON ARRIVAL

Be extra careful if using a sharp instrument when removing the protective wrapping from the equipment. Upon receipt of a Manual Induction Sealing, please inspect for external damage, if no damage is evident on the external packaging, open package to ensure all ordered items are within, and there is no concealed damage to the machine.

### HANDLING

The JORESTECH® Manual Induction Sealing Machine was completely tested and inspected before being ready for shipment. Like any piece of electronic equipment, it should not be dropped or given harsh treatment.

## GENERAL SAFETY WARNINGS

**THIS EQUIPMENT PRODUCES AN ELECTROMAGNETIC FIELD TO FACILITATE THE INDUCTION SEALING PROCESS. THE ELECTROMAGNETIC FIELD QUICKLY HEATS ANY METAL WITHIN THE FIELD AND MAY, UNDER CERTAIN CONDITIONS, IGNITE THE METAL OR SURROUNDING MATERIALS.**



**WARNING:** This machine uses voltages that are potentially hazardous. Severe, even life-threatening, personal injury could result if the instructions contained in this manual are not followed. Before operating the unit, please read this manual thoroughly. This manual should be kept for future reference.

- ⚠ **DO NOT** Reach into the equipment, or any electrical enclosure, without first removing the power. Always disconnect power before servicing, changing accessories or cleaning the unit
- ⚠ **NEVER** apply power to this unit without all covers securely in place.
- ⚠ **DO NOT** Use the unit outdoors.
- ⚠ **DO NOT** Operate this equipment in a hazardous environment. The presence of High Voltage within this equipment may result in explosion or fire when operated near flammable vapors, fuels, or other combustibles.
- ⚠ **DO NOT** Attempt to seal products with damaged or improperly applied liners, as they may overheat causing the liner and container contents to ignite.
- ⚠ **BEFORE** operating the machine, make sure the power supply is correct and is properly grounded.
- ⚠ **DO NOT** use the unit if the power cord, plug or any other parts are damaged. To avoid damaging the electrical cord, keep it out of areas where it can be stepped on.
- ⚠ **DO NOT** alter or modify the machine's original design in any way.
- ⚠ **NEVER** operate or service your unit until you have read this manual. Keep this Operation Manual with care for easy reference.

## SPECIFICATIONS

PARAMETERS	E-IND-35	E-IND-100HA	E-IND-130HC
Rated Voltage	120VAC	120VAC	220VAC
Rated Frequency	60Hz	60Hz	50/60Hz
Output Power	500W (0.67HP)	500W (0.67HP)	500W (0.67HP)
Sealing Time Range	0.1 – 9.9 sec	0.1 – 9.9 sec	0.1 – 9.9 sec
Sealing Diameter	15–35mm (0.6-1.4")	20–100mm (0.8-3.9")	60–130mm (2.4-5.1")
Max. Ambient Temperature	≤45°C (113F)	≤45°C (113F)	≤45°C (113F)
Relative Air Humidity	≤95%	≤95%	≤95%
Housing Protective Grade	IP21	IP21	IP21
Housing Material	Plastic	Plastic	Plastic
Model Type	Top table	Top table	Top table
Machine Dimensions (LxWxH)	340x290x130mm (13.4x11.4x5.1")	340x290x130mm (13.4x11.4x5.1")	340x290x130mm (13.4x11.4x5.1")
Gross Weight	5kg	5kg	5kg

## OPERATION

The *JORESTECH*<sup>®</sup> Manual Induction Sealing Machine Series are compact, but powerful enough to handle virtually all your induction cap sealing needs. With its advanced electronics and a variety of sealing heads, these portable units can seal everything from the smallest closures to 120mm wide-mouth containers. These units require no water cooling, or special power so it can be used virtually anywhere, and are extremely simple to use.

Induction Sealing is a process used to seal containers hermetically by using an electromagnetic field to heat a heat-sealable foil liner located within a closure. This electromagnetic field heats the liner by inducing currents into the metal of the foil liner located within the closures of your containers. Electrical currents, called “eddy currents”, are induced into the aluminum foil, resulting in a resistance-type heating effect. The polymer coating melts and flows around the lip of the container, when the electromagnetic field is shut off the polymer cools and hardens, bonding the foil to the container lip. When the closure is removed from the container the metal foil will remain bonded to the lip of the container.

**NOTE:** A fundamental requirement for induction cap sealing is to have the proper amount of torque on the cap, which exerts a downward force when sealing.

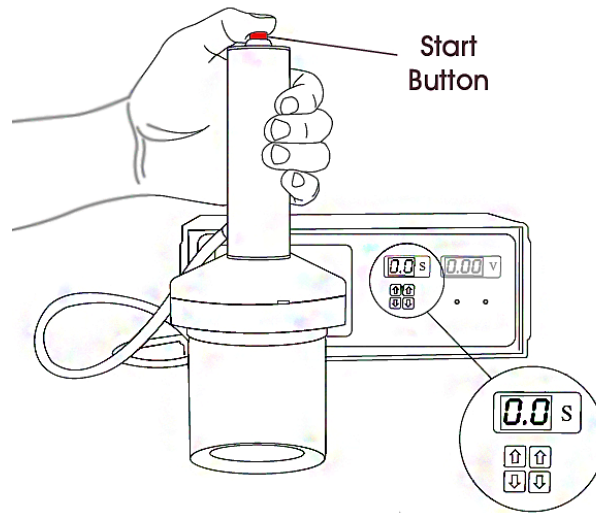
### Sealing Head Selection

The Manual Induction Sealing Machines are designed for different cap sizes. If you need to seal multiple products, with a varying range of cap and liner sizes, it is possible that you need to select the machine with the appropriate sealing head dimension according with your production needs. (See *Section: Sealing Heads dimensions and Types*)

Each sealing head is designed to allow centering the caps, to achieve better sealing results. The large sealing head (E-IND-130HC) is supplied with 3 standard size centering rings to aid in properly aligning the cap under the center of the sealing head. For replace a centering ring, you must unthread the one in the sealing head and thread and tighten the other one.

## Sequence of Operation

- 1- Place the machine on a stable worktable.
- 2- Connect the power cord to a wall outlet with correct supply voltage.
- 3- Plug in the machine and TURN ON the main switch on back side of machine. Display must show the actual input voltage. Check if the voltage is within the correct range for machine operation.
- 4- Tightly screw on induction seal cap to jar and center the induction head on top of the cap.
- 5- Apply a slightly downward pressure on the cap, and press the red start button until the timer in display reaches zero.



- 6- Allow cap to cool before handling. Open the bottle to check the sealing conditions. If the sealing is acceptable then repeat the steps to seal another cap. If not, you must need to adjust the sealing time accordingly with the size of the cap and type of liner.

**NOTE:** If the liner looks tight but can be peeled off easily, it is possible that sealing time is insufficient and you need to increase sealing time. If the liner shows signs of deterioration and/or wrinkling and the inside of the closure shows signs of melting or burned, means the sealing time is too long and you need to decrease the sealing time.

**NOTE:** Timer can be set between 0.1 and 9.9 seconds. To ensure the best seal, unit should be tested to determine the best time setting according with product.

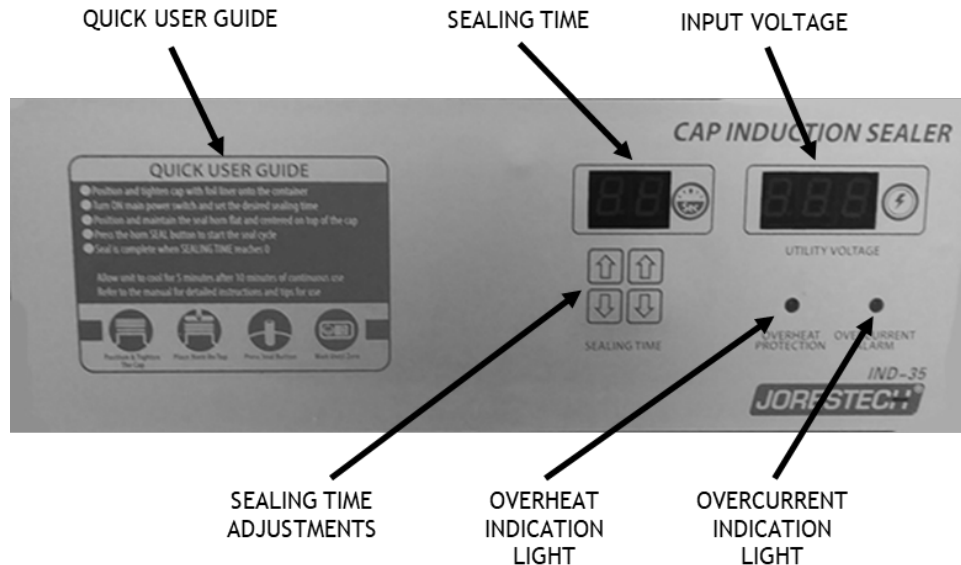
When the voltage value, shown on display is above 140VAC or below 90VAC (For E-IND-35/100HA) stop sealing work until voltage returns to normal conditions.

When the voltage value, shown on display, is above 250VAC or below 180VAC (For E-IND-130HC) stop sealing work until voltage returns to normal conditions.

If the RED Overcurrent light indicator, on the front panel, flickers and sounds a warning tone, means that output current exceeds the maximum value and the Overcurrent protection function is activated. In this case Induction work is not effective. Move the induction head from cap surface, increasing the distance, until the lights turns off.

If the temperature of main components inside the machine is too high, the YELLOW light indicator, on the front panel, will be ON and Overheating protection function activates, inductive output stops automatically. Sealing shall not be done until temperature drops down and yellow indicators lights off. Allow unit to cool for 5 minutes after 10 minutes of continuous use.

## Control Panel



## MAINTENANCE

**IMPORTANT: DO NOT** Reach into the equipment, or any electrical enclosure, without first removing the power. Always disconnect power before servicing, changing accessories or cleaning the unit.

JORESTECH® Manual Induction Sealing Machines are designed to require minimal maintenance. However, to ensure long-term reliability, it is a good practice to perform some preventive maintenance actions.

### Routine Inspection and Servicing

A weekly visual inspection is a good practice that will often identify issues before they affect the equipment. You should check for dust and corrosive buildup on the system and hardware. Use low pressure dry compressed air or a soft brush to remove dust for the machine components.

Inspect any cables or connectors for damage or deterioration. Cables must be free of kinks, cracks, burns or discoloration along its entire length.

Inspect the sealing head. Make sure that sealing head housing is free of cracks or discolored from overheating.

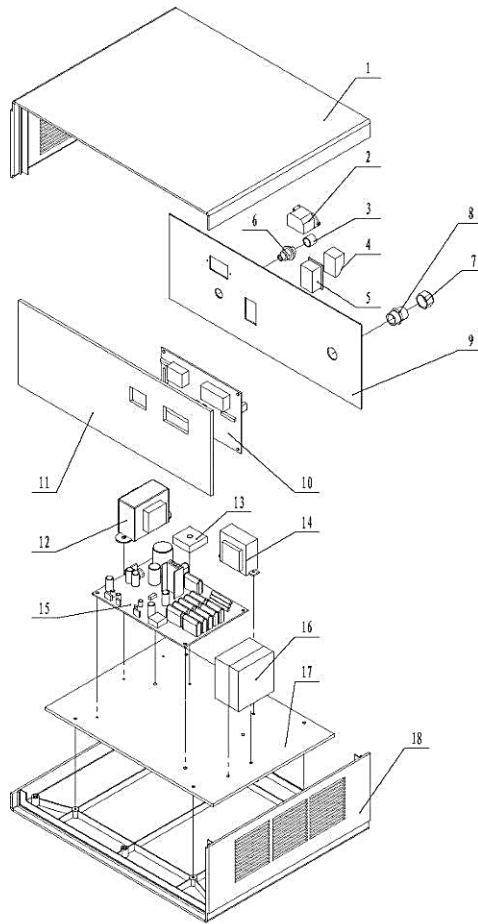
Inspect internal connections. Remove the top cover and front and back cover plate. Power and control connections should remain tight. Loose connections may often be recognized by discoloration of the wire or connector.

## TROUBLESHOOTING

MALFUNCTION	POSSIBLE CAUSE	SOLUTION
Machine does not turn ON	Power cord is not plug in into wall receptacle.	Plug in the power cable.
	Fuse broken.	Replace the broken fuse.
	Main switch damage or broken.	Replace Main power switch.
Control Panel is lit but nothing happens when start button is pressed	Broken Start button	Replace Start Button
	Damage Sealing Head	Replace Sealing head
Work signal indicator is in order but machine does not seal.	Input voltage out of range	Discontinue use until input voltage is within operational range
	Insufficient sealing time.	Increase sealing time.
	Materials of inductive liner and sealing object are inconsistent.	Choose appropriate materials.
	Damage Sealing Head	Replace Sealing Head.
	Damage Main circuit board	Replace Main circuit board
Overheating light is ON (yellow indicator)	High Temperature of main components	Discontinue use until light turn OFF.
Overcurrent light is ON (red indicator)	Output current exceeds the maximum value	Move induction head from jar and cap surface until light turns OFF

# MACHINE PARTS AND DIAGRAMS

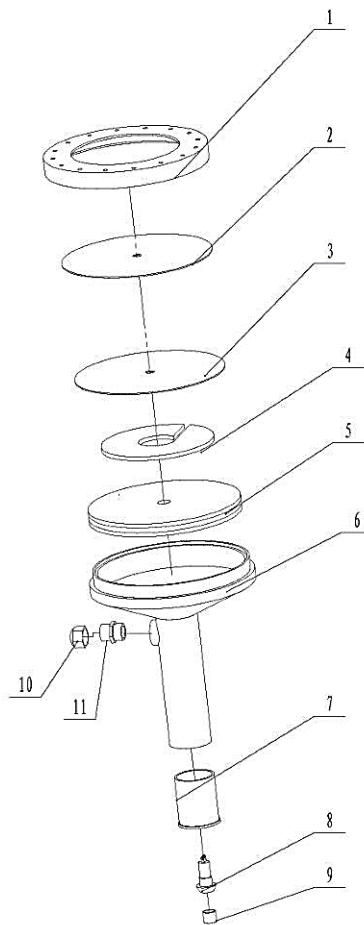
## Machine Breakdown



Part Number	Description	Quantity
1	Machine Top Cover	1
2	Power plug	1
3/6	Power Fuse	1
4/5	Main Switch	1
7/8	Induction Head Cable Gland	1
9	Back Cover	1
10	Display Board	1
11	Front Cover	1
12	Control Transformer	1
13	Bridge Rectifier	1
14	Control Inductive Reactance	1
15	Main PCB Board	1
16	Power Transistor / Cooling Fan	1
17	Mounting Plate	1
18	Machine Base	1

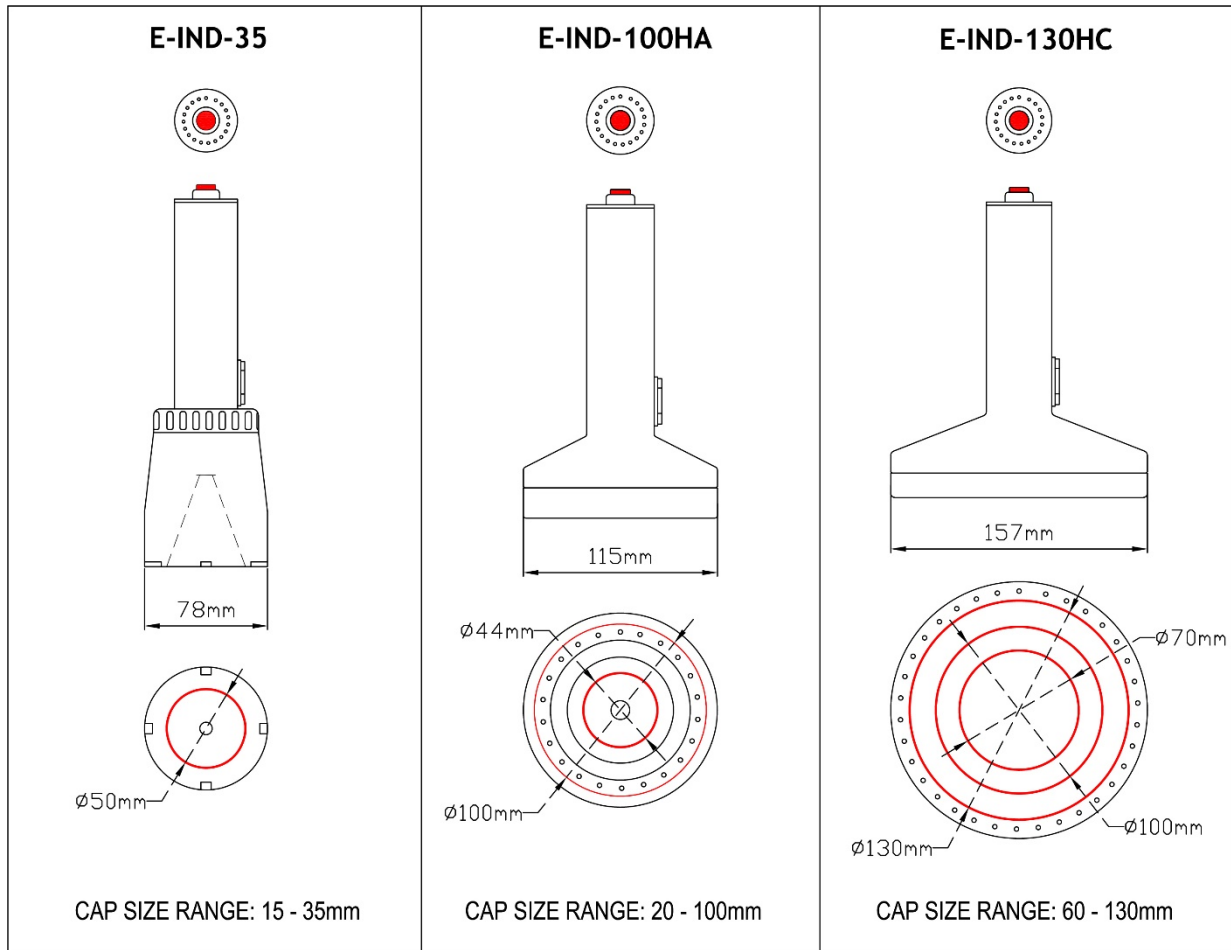


## Sealing Head Breakdown



Part Number	Description	Quantity
1	Cover Plate	1
2	Isolation board	1
3	Induction Coil	1
4	Isolation Board (E-IND-130C only)	1
5	Induction Coil (E-IND-130C only)	1
6	Handheld Outer Cover	1
7	Handheld Top Cover	1
8/9	Induction Start Switch	1
10/11	Induction Head Cable Gland	1

# Sealing Heads Dimensions and types

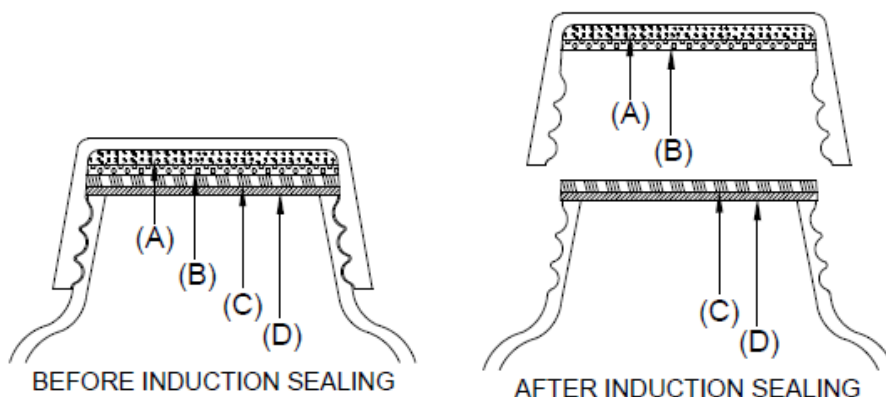


## ADDITIONAL INFORMATION

### Understanding Induction Sealing

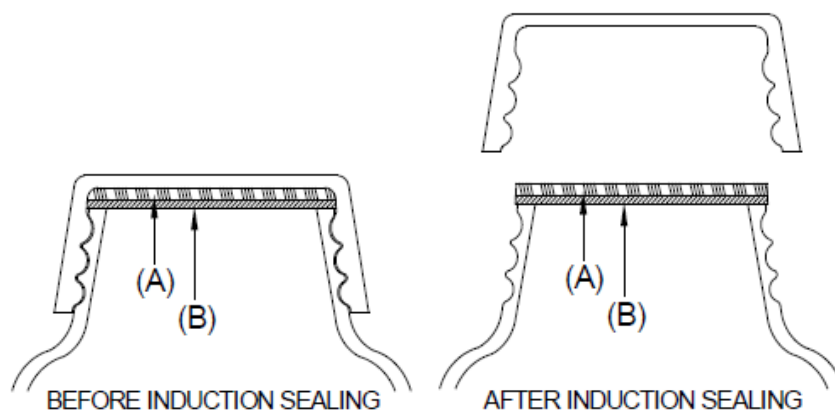
#### Multiple Layer Liners

A multiple layer liner typically consists of a pulp board layer (A), a wax layer (B), and a layer of aluminum foil (C) coated with a polymer (D). The polymer (D) must be compatible with your container material and capable of producing the seal strength and removal force required by your application.



#### Single Piece Liners

A single piece foil liner typically consists of a layer of aluminum foil (A) coated with a polymer (B) inside a closure. The polymer (B) must be compatible with your container material and capable of producing the seal strength and removal force required by your application.



## Understanding The Results of Induction Sealing

### Easy-Peel Liners

Easy-peel liners seal tightly to the lip of the container, but allow for a clean peel from the container.



### Tamper-Evident Liners

Tamper-evident liners seal tightly to the lip of the container, but leave part of the liner on the lip when opened. This is used to show evidence that the container has been opened.



### Good Seal

A good seal will have good adhesion for the entire circumference of the container opening and will stand up well to pressure tests. Wrinkling of the liner will be at a minimum, and the inside of the closure will show no signs of overheating. On 2-piece liners, the liner and closure will show no signs of swirling or twisting from poor wax melt or absorption.



## No Seal

A No Seal result on a container is when the container is run through a sealing cycle and the liner shows no signs of adhesion to the lip of the container.



### Possible Causes

- Insufficient cycle time.
- Incorrect induction liner - Incompatibility.
- Sealer not running.

### Solutions

- Increase the TIMER setting on the sealer.
- Check cap/liner specifications to ensure the correct liner is being used.
- Turn On / Troubleshoot Sealer.

## Partial or Weak Seal

A Partial Seal result on a container is when the liner only shows signs of adhesion to a portion of the lip of the container when the closure is removed.

A Weak Seal result on a container is when the liner shows signs of full adhesion to a portion of the lip of the container, but fails under pressure tests.

These conditions can range from a seal that let's go under light pressure to a pinhole leak that exists along the lip of the container. On 2-piece liners you may also see signs or swirling or twisting due to poor wax melt or absorption.



### Possible Causes

- Insufficient cycle time.
- Incorrect induction liner - incompatibility.
- Insufficient on-torque.
- Improper sealing head placement on cap - not centered or level to the closure.

- Deformations on the land area.
- Thin or weak land area - too narrow.

#### Solutions

- Increase the TIMER setting on the sealer.
- Check cap/liner specifications to ensure the correct liner is being used.
- Check container specifications.
- Verify the torque requirement of your container and closure.
- Verify the proper alignment of the sealing head and your container during the sealing process.
- Inspect your containers.

#### Overheated or Burned Seal

An Overheated or Burned Seal result on a container is when the liner shows signs of discoloration, deterioration, and/or wrinkling. The inside of the closure may show signs of melting, and on a 2-piece liner the backing material may be discolored or burned, depending upon the severity of the overheating.



A burned smell often accompanies overheating and may possibly affect the smell or taste of your product and may be the only indication of overheating.

**NOTE: When overheating of the liner occurs, ignition of the liner and/or container contents is possible.**

#### Possible Causes

- Excessive cycle time.
- Insufficient on-torque.
- Improper sealing head placement on cap - not centered or level to the closure.
- Deformations on the land area.
- Thin or weak land area - too narrow.

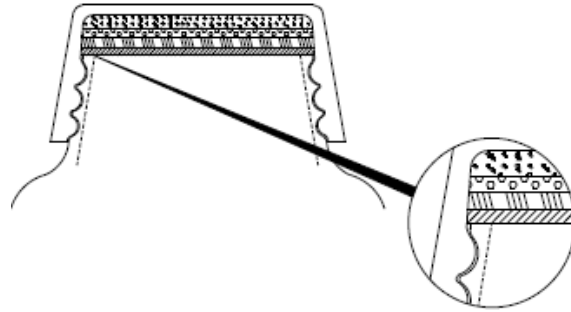
#### Solutions

- Decrease the TIMER setting on the sealer.
- Verify the torque requirement of your container and closure.
- Verify the proper alignment of the sealing head and your container during the sealing process.
- Inspect your containers.

## Cap & Container Issues

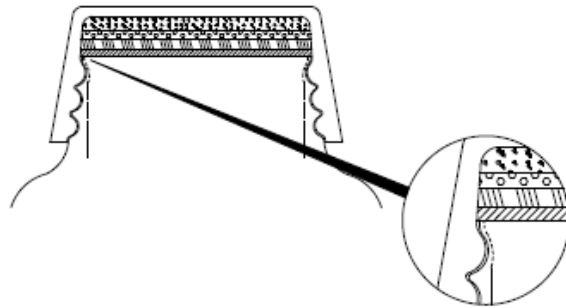
### Good Container Lip/Liner Contact

Good contact between the liner material and the container lip is very important. This goes hand in hand with the amount of torque applied, but can be a problem even when the torque levels are good. The land area of the container should be wide enough and rigid enough to support the pressures and heating required for a good seal.



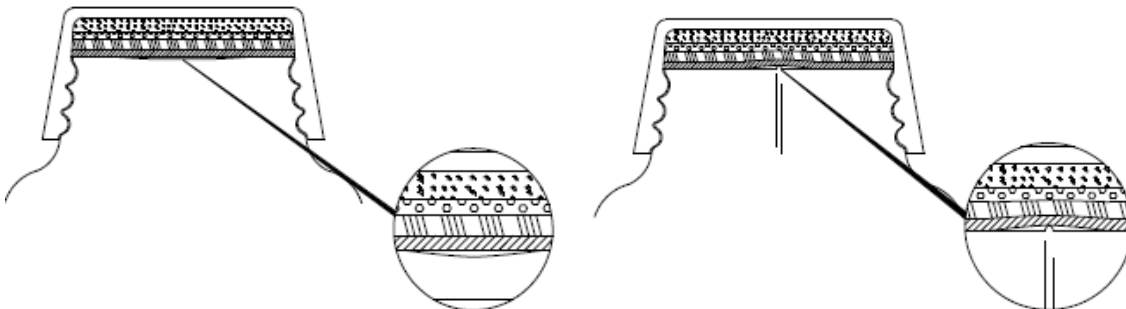
### Poor Container Lip/Liner Contact

A thin or weak land area can cause poor contact between the liner material and the container lip. When the land area is too thin there may not be enough rigidity in the land area to support the pressures and heat required for a good seal.



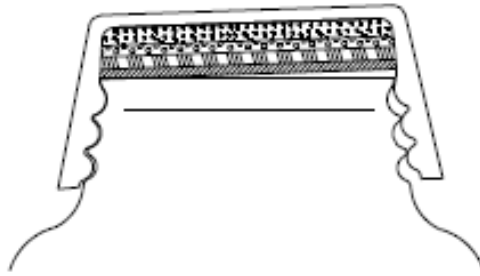
### Container Lip Deformations

Gaps between the land area and liner material can be the result of any number of problems, from mold imperfections to container material issues. Regardless of the cause, any gap between the liner and container land area may cause overheating and failure of the seal. A gap caused by saddles on the land area and a gap caused by a protrusion are shown. These defects can be detected on the container land area before the container is capped.



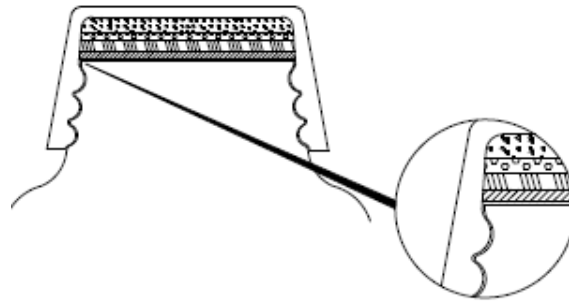
## Cocked Cap

A cocked cap is usually due to a problem with the capping process or a cap or container problem. The gap created can cause overheating and the cap itself may actually jam the container under the sealing heads causing the liner to overheat severely.



## Torque Issues

One of the most common causes of poor or inconsistent sealing is an improperly torqued cap. Whether the torque is too low or too high, the end result is usually an air gap between the lip of the container and the liner material. This air gap will usually cause overheating of the liner, but at the very least will create a gap too large for the polymer to fill.







700 Sawgrass Corporate Parkway,  
Sunrise, FL, 33325  
Phone: 305.594.9000 • Fax: 305.594.9004