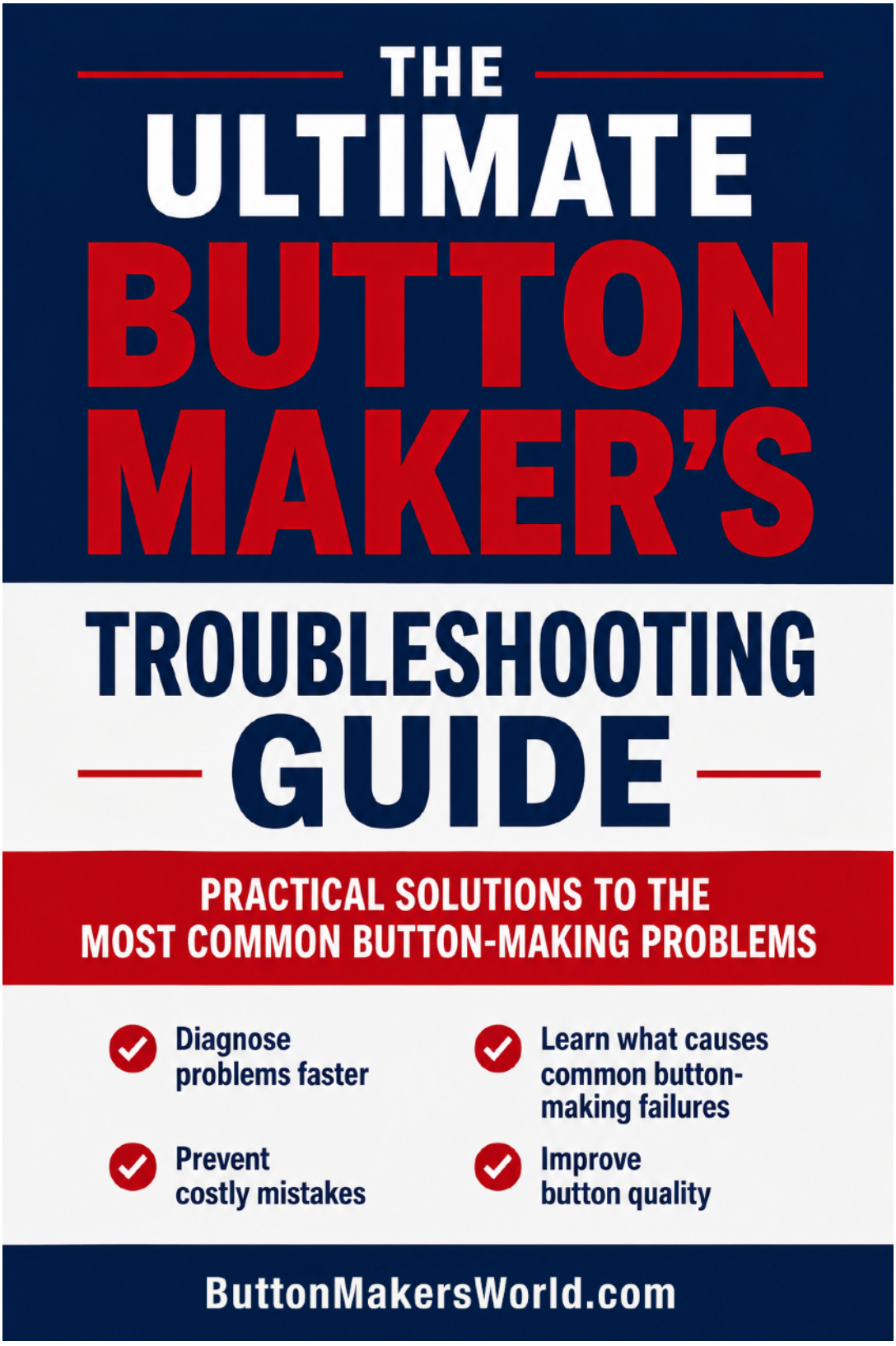

About the Author

Don Ratliff has been involved in the button-making industry for more than 30 years.

During that time, he helped thousands of customers select Button Machines, choose the right Components, and troubleshoot virtually every type of button-making problem imaginable.

Don is also the creator of **Button Design Studio**, a family of software applications developed specifically for button makers. His goal has always been to make button making easier, more enjoyable, and more successful for everyone.

He created **The Ultimate Button Maker's Troubleshooting Guide** to share the lessons he's learned over three decades in the industry. His hope is that the guide helps button makers spend less time troubleshooting and more time creating great buttons.

About This Guide

This guide is intended to help button makers **diagnose, solve, and avoid** the most common button-making problems. By understanding what causes these issues, you'll often be able to prevent them before they occur. It is not intended to replace the operating instructions provided by the manufacturer of your particular Button Machine.

Throughout this guide, the following terms are capitalized because they refer to specific parts of the button-making process:

Button Machine, Components, Shell, Artwork, Mylar, Button Back, Dies, First Crimp, Second Crimp, Tuck Area, and **Cutline**.

Using these terms consistently will make the troubleshooting process easier to understand.

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- Keep Your Button Machine Clean and Dry
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Chapter 1

Before You Blame the Button Machine

When a Button Machine suddenly starts making poor-quality buttons, it's natural to assume something is wrong with the machine.

Sometimes that's true.

Many times, it isn't.

That's why the first step in troubleshooting isn't adjusting the Button Machine.

It's asking one simple question:

What changed?

If your Button Machine made good buttons yesterday but isn't making good buttons today, something is different. Finding that difference is the fastest way to solve the problem.

That doesn't mean the Button Machine is never at fault.

Worn or broken springs, or Dies that need realignment can affect button quality. But before assuming a mechanical problem, rule out the more common causes first.

If your Button Machine has never made good buttons, it may be a setup issue, Components that weren't designed for your Button Machine, or simply becoming familiar with the operation of the machine. It's also possible the machine requires adjustment or has a mechanical problem.

Button Machines are designed to work within very close tolerances. Small differences in Components, paper thickness, Artwork, cleanliness, or printing methods can affect the quality of the finished button.

Fortunately, once you understand what to look for, problems become easier to identify.

Change One Thing at a Time

One of the biggest mistakes people make when troubleshooting is changing several things at once.

They change the paper.

They adjust the Button Machine.

Then they try Components from another supplier.

If the problem disappears, they have no way of knowing what solved it.

Instead, change one thing.

Make another button and evaluate the results.

If the problem remains, move on to the next most likely cause.

This simple approach saves time, reduces frustration, and avoids wasting supplies.

Don't Overlook Your Artwork

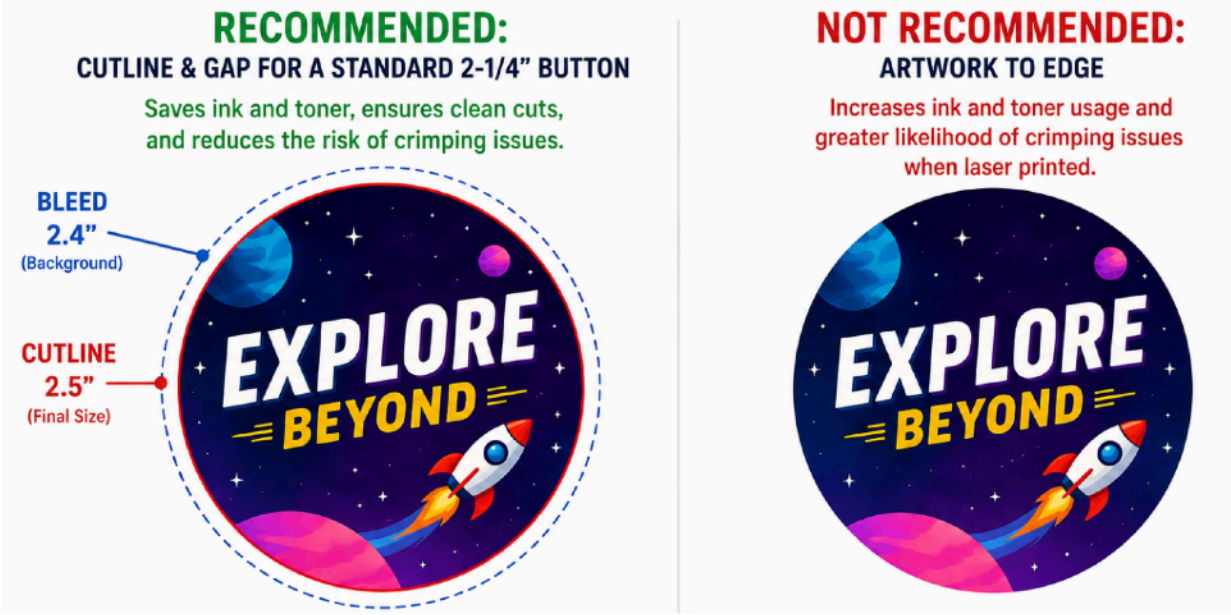
Your Button Machine doesn't simply press four Components together. During the **First Crimp**, the Mylar and Artwork must wrap smoothly around the Shell.

For that to happen, they need to slide freely.

One of the most common causes of button-making problems is **laser toner that extends all the way to the edge of the design**.

Laser toner isn't just colored powder. During printing, it's fused to the paper, forming a thin plastic-like coating. When that coating extends into the **Tuck Area**, it makes it harder for the Mylar and Artwork to slide around the Shell as they wrap beneath the edge of the Shell during the First Crimp. That added resistance can interfere with the crimping process and lead to a variety of button-making problems.

If you're using a laser printer, it’s best to leave a narrow, unprinted gap between the printed Artwork and the Cutline. This gap becomes part of the hidden Tuck Area, so it won't be visible on the finished button.



Leaving the Tuck Area unprinted allows the Mylar and Artwork to slide more freely during the First Crimp. This can improve button quality while also reducing toner usage on laser printers and ink consumption on inkjet printers.

Related Topic: See **Chapter 2 – Understanding Your Button Machine** for an explanation of the First Crimp and the Tuck Area.

Chapter 2

Understanding Your Button Machine

Before you can successfully troubleshoot problems witYh your Button Machine, it helps to understand what it's trying to do.

Many people think a Button Machine simply presses four Components together.

It doesn't.

A Button Machine forms a button by crimping and curling the edge of the Shell around the Artwork, Mylar, and Button Back.

That process takes place in two steps: the **First Crimp** and the **Second Crimp**.

Once you understand those two steps, many common button-making problems become much easier to diagnose and solve.

The Four Components

A button begins with four Components.

Shown above are the four Components used when making a pinback button

Shell

The **Shell** is the steel front of the button. During the **First Crimp**, the Shell, Artwork, and Mylar curl together around the edge of the button. During the **Second Crimp**, the curled edge is wrapped securely around the Button Back, locking all four Components together into a finished button.

Artwork

The Artwork is your printed design. Once the button is assembled, it becomes the visible face of the finished button.

Mylar

The Mylar is the clear plastic covering placed over the Artwork. It protects the printed image from fingerprints, scratches, moisture, and everyday wear. Button

Back

The Button Back is the final Component added during assembly. During the Second Crimp, the edge of the Shell curls around the Button Back, locking all four Components together into a finished button.

The First Crimp

The First Crimp is where the button begins to take shape.

As the Shell starts to curl, the Artwork and Mylar wrap around the edge of the Shell.

For this to happen properly, both the Artwork and Mylar must slide freely.

If something creates friction during the First Crimp, the Artwork and Mylar may not wrap smoothly around the Shell. That's when many common button-making problems begin.

Understanding what happens during the First Crimp is one of the keys to successful troubleshooting.

The Tuck Area

One of the most important parts of a finished button is a part you don’t see.

I call it the **Tuck Area**.

Think about making a bed.

When you put a sheet on a mattress, the sheet doesn't stop at the edge. It wraps around the sides and tucks underneath the mattress to help hold everything in place.

The Artwork and Mylar do the same thing.

The center becomes the visible face of the button.

The outer edge wraps around the Shell and tucks underneath during the First Crimp.

That hidden portion is the **Tuck Area**.

Although the Tuck Area is hidden inside the finished button, it plays an important role in producing a smooth, properly formed button.

If the Artwork and Mylar can't slide freely through the Tuck Area, problems such as wrinkled Mylar, a puffy or bubbled Mylar edge, or Artwork sticking out around the edge can occur.

The Second Crimp

During the Second Crimp, the edge of the Shell continues curling until it locks securely around the Button Back.

If everything has gone well during both crimps, the result is a finished button with a smooth face, a tight crimp, and a securely attached Button Back.

Steel Dies vs. Plastic Dies

People often ask which type of Button Machine I recommend.

The truth is, I haven't worked with every Button Machine on the market, so I can't honestly compare them all.

What I can share is my own experience.

Over the years, I found that Button Machines with **steel Dies** generally produce more consistent results than those with **plastic or composite Dies**. One reason is simple: **mass**.

You don't drive nails with a plastic hammer. You use a steel hammer because its greater mass transfers force more effectively. The same principle applies to Button Machines.

There's also another important consideration. The **Shell** itself is made of **steel**. During button making, the Dies must reshape and curl the edge of a steel Shell around the Artwork, Mylar, and Button Back. That requires considerable force.

Just as important is **rigidity**.

Steel Dies maintain their shape under pressure. Plastic and composite Dies can flex, bend, or compress slightly as force is applied. Even tiny amounts of movement can affect how consistently the Components are crimped together. Steel's rigidity helps keep the Components aligned and allows the crimping force to be applied more uniformly from button to button.

Does that mean every Button Machine with steel Dies produces perfect buttons? No.

But Button Machines with steel Dies generally produce better-quality buttons and more consistent results because they combine the mass needed to transfer force efficiently with the rigidity needed to precisely form a **steel Shell** into a finished button.

Chapter 3

Use Components Designed for Your Button Machine

If I could give every button maker just one piece of advice, it would be this:

Purchase your Components from the company that manufactured your Button Machine or the company that sold it to you.

It sounds simple, but over the years I've found it to be one of the biggest factors in avoiding problems and producing consistently good buttons.

Many button-making problems begin when button makers try to save money and purchase Components that weren't designed for their machine.

Sometimes the differences are obvious.

Often they aren't.

Button Machines Are Designed to Work Within Close Tolerances

Every Button Machine is designed to work with Components manufactured to specific dimensions.

Even small differences can affect how a button crimps.

That's why Components that appear identical don't always produce the same results.

A Lesson I Never Forgot

Years ago, I sold two different brands of Button Machines that made 2-1/4-inch buttons.

The Mylar used in one machine was **1/64 inch** larger than the Mylar used in the other.

To the eye, the difference was impossible to see.

To the Button Machine, it made a difference.

If someone used the smaller Mylar in the machine that called for the larger one, the number of crimping problems increased.

Don't Assume the Same Size Means they are Compatible

One of the biggest misconceptions in button making is that Components that are supposedly the same size are interchangeable.

They often aren't.

For example, **Badge-A-Minit®** referred to their Components as **2-1/4-inch**, while they actually measured **2-3/8 inches**.

Mr. Button® used a different sizing system. Although their Components measured **2-1/3 inches**, someone measuring them with a ruler might easily assume they were 2-1/4-inch Components.

Both were manufactured to different specifications and were not interchangeable with Components designed for other 2-1/4-inch Button Machines.

The same principle applies to many 3-inch buttons and other common button sizes.

The lesson is simple.

Don't identify Components with a ruler.

Identify them by the Button Machine they were designed to fit.

One Question I Was Asked a Thousand Times

Over the years, people often called and asked if we carried Components for 2-1/4-inch Button Machines.

Rather than answer that question right away, my first question was:

"Which Button Machine do you have?"

That's because the Button Machine—not a ruler—is the best way to determine which Components you actually need.

Over time, I adopted a simple policy: **we would only sell Components for the Button Machines we sold.**

Why?

Because **"almost compatible" isn't the same as compatible.**

One set of Components might fit another manufacturer's machine and even produce a few good buttons. But if the fit wasn't exactly right, problems eventually appeared. When they did, customers naturally assumed our Components were defective, when the real issue was that they weren't designed for that specific Button Machine.

My advice was: **buy your supplies from the company that manufactured your Button Machine or the company that sold it to you.** They know which Components were designed for that machine and are in the best position to recommend the correct supplies.

That policy eliminated confusion, reduced unnecessary troubleshooting, and helped customers achieve the consistent results they expected.

Metric Components and Inch Components

Some Button Machines use Components measured in inches.

Others use metric Components.

Even when the sizes are close, they are not interchangeable.

Mixing the two will definitely cause problems.

Buy Components for Your Button Machine

It's natural to compare prices when buying supplies.

But saving a few dollars on Components isn't a bargain if it leads to wasted Shells, Artwork, Mylar, time, and frustration.

Using Components designed for your specific Button Machine is one of the simplest ways to avoid button-making problems.

Related Topic: Many of the problems caused by incompatible Components are covered in **Chapter 4 – Solving Common Button-Making Problems**.

Chapter 4

Solving Common Button-Making Problems

Most button-making problems have only a handful of possible causes.

The key is approaching them in a logical order.

Before you begin troubleshooting, remember these three principles:

- **What changed?**
- **Always check the easy things first.**
- **Change one thing at a time.**

Keeping these three principles in mind will help you solve most button-making problems without unnecessary adjustments or wasted supplies.

Problem #1

Mylar or Artwork Sticking Out Around the Edge

Symptoms

Part of the Mylar, the Artwork, or both extend beyond the edge of the finished button.

The problem may occur in one area or around the entire button.

This usually means the Shell did not completely wrap around the Components during the crimping process.

Common Causes

What to Check

Begin by making sure all of the Components are lying flat and fully seated in their respective Dies before making the button. The Shell, Artwork, Mylar, and Button Back should all sit completely flat. The Artwork and Mylar should not ride up the side of the Die, and the Shell and Button Back should not be tilted or resting on debris. A Component that's not fully seated can prevent the Shell from wrapping evenly around the button, leaving the Mylar or Artwork exposed around the edge.

Next, confirm that you're using Components designed for your Button Machine.

Now inspect the paper. If you suspect it may be contributing to the problem, make a test button using plain, unprinted copy paper. Because there's no toner extending into the Tuck Area, this simple test helps determine whether the problem is being caused by paper thickness or by heavy laser toner extending to the edge of the design.

Examine the Artwork to make sure it was cut accurately using the proper template or graphic punch.

If you're printing with a laser printer, inspect the Artwork to see whether toner extends into the Tuck Area. Heavy toner in this hidden area increases friction during the First Crimp and can prevent the Shell from fully wrapping around the Components.

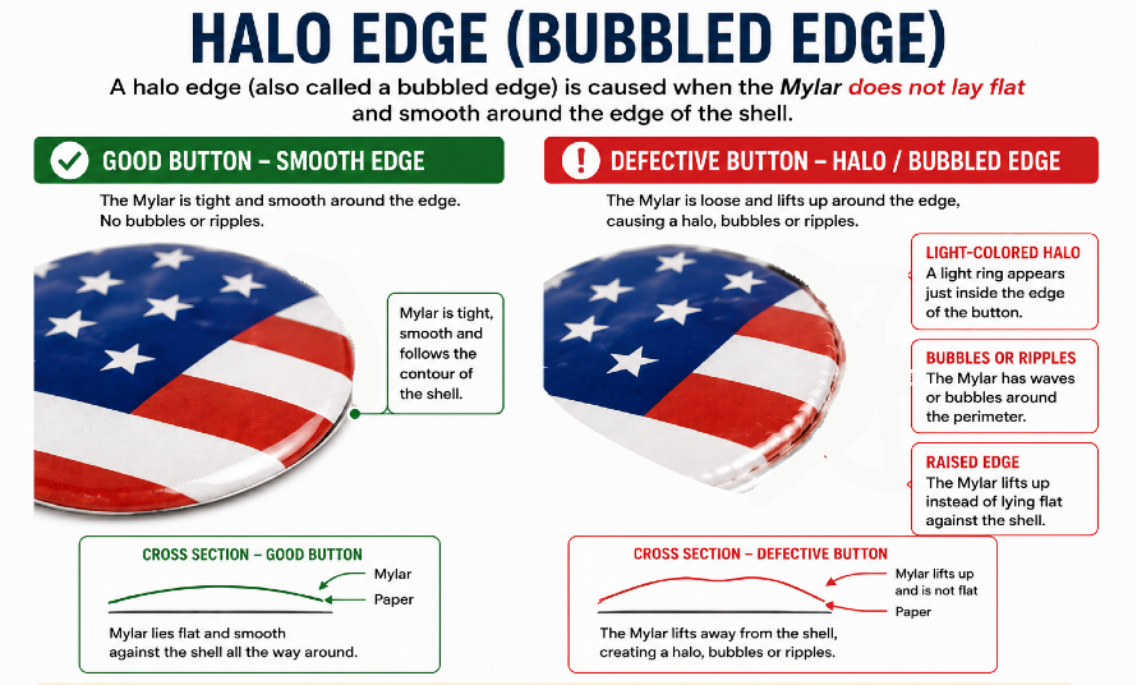
Clean the Dies by removing paper flecks with compressed air, then wipe away toner residue with a soft cloth dampened with isopropyl alcohol.

Finally, make sure both the First Crimp and the Second Crimp are completed before releasing the handle.

If you've ruled out the common causes and the problem still exists, inspect the springs for wear or damage, then check the Dies for wear and proper alignment.

Related Topic: See **Chapter 3 – Using Components Designed for Your Button Machine.**

Problem #2



Symptoms

The button appears to be assembled correctly, but the Mylar doesn't lie flat against the face of the button.

Instead, a raised or puffy ring appears around the outside edge of the button.

Common Causes

- Make sure all Components are lying flat
- Friction during the First Crimp.
- Heavy laser toner extending into the Tuck Area.
- Paper that's too thick.
- Mylar not designed for your Button Machine.
- Components not designed for your Button Machine.

What to Check

One of the most common causes of a puffy Mylar edge is friction during the First Crimp.

As the Shell begins to curl, the Artwork and Mylar must slide around the edge of the Shell and through the Tuck Area. If they can't move freely, the Mylar may bunch slightly instead of wrapping tightly around the Shell.

If you're using a laser printer, examine your Artwork. Does toner extend all the way to the button's edge? If so, try leaving a narrow, unprinted gap between the printed Artwork and the Cutline. Since this area becomes part of the Tuck Area, it won't be visible on the finished button.

Next, clean the Dies. Remove paper flecks with compressed air, then wipe away toner residue with a soft cloth dampened with isopropyl alcohol.

Pro Tip: If your Button Machine manufacturer recommends it, apply a light coat of stick lubricant to the beveled crimping edge of the Dies. This can help the Artwork and Mylar slide more smoothly during the First Crimp, reducing friction and helping produce a tighter wrap around the Shell.

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If you suspect the paper may be contributing to the problem, make a test button using plain, unprinted copy paper. Because there's no toner extending into the Tuck Area, this simple test helps determine whether the problem is being caused by paper thickness or heavy laser toner.

Finally, confirm that you're using Components designed for your Button Machine.

Related Topic: See **Chapter 2 – Understanding Your Button Machine** for an explanation of the First Crimp and the Tuck Area.

Problem #3

Wrinkled Mylar

Symptoms

Instead of lying smooth across the face of the button, the Mylar develops wrinkles or creases.

The wrinkles may be small or severe and usually appear after the button has been assembled.

Common Causes

- Friction during the First Crimp.
- Paper that's too thick.
- Mylar not designed for your Button Machine.
- Components not designed for your Button Machine.
- Heavy laser toner extending into the Tuck Area.
- Dies that need realignment.

What to Check

Begin by confirming that you're using Components designed for your Button Machine.

Next, clean the Dies thoroughly. Remove paper flecks with compressed air, then wipe away toner residue with a soft cloth dampened with isopropyl alcohol.

If needed, apply a light coat of stick lubricant to the beveled crimping edge.

If you're using a laser printer, examine the Artwork. Does toner extend all the way to the Cutline?

If so, try leaving a narrow, unprinted area between the printed Artwork and the Cutline. Since this portion becomes part of the Tuck Area, it won't be visible on the finished button.

If you suspect the paper may be contributing to the problem, make a test button using plain, unprinted copy paper. Because there's no toner extending into the Tuck Area, this simple test helps determine whether the problem is being caused by paper thickness or heavy laser toner.

If you've ruled out these common causes and the problem continues, inspect the Dies for wear, damage or possible realignment.

Related Topic: See **Chapter 2 – Understanding Your Button Machine** for an explanation of the First Crimp and the Tuck Area.

Problem #4

Button Won't Crimp Completely

Symptoms

The handle feels unusually hard to pull, or the button doesn't crimp completely. The finished button may have a loose Button Back, exposed Artwork or Mylar around the edge, or an incomplete crimp.

Common Causes

- Paper that's too thick.
- Components not designed for your Button Machine.
- Foreign material or pieces of previously crimped Components lodged in the Dies.
- Worn or broken springs.
- Dies that need realignment.

What to Check

Begin by confirming that you're using Components designed for your Button Machine.

Next, inspect the paper. If you suspect the paper may be contributing to the problem, make a test button using plain, unprinted copy paper. Because there's no toner extending into the Tuck Area, this simple test helps determine whether the problem is being caused by paper thickness or heavy laser toner.

Before assembling another button, inspect both Dies carefully. Make sure no Shell, Button Back, Mylar, Artwork, or pieces of a previously attempted button are still lodged in either Die. Even a small piece of material left behind can prevent the Button Machine from completing the crimp.

Inspect the Artwork to make sure it has been cut accurately and that no extra material has accidentally been included during assembly.

Clean the Dies using compressed air to remove paper flecks. If necessary, wipe the Dies with a soft cloth dampened with isopropyl alcohol to remove toner residue and other buildup.

If the problem continues after you've ruled out the common causes, inspect the springs, the Dies, and the Die alignment.

Problem #5

Finished Button Is Loose or Falls Apart

Symptoms

The button appears to have been assembled correctly, but the Components separate easily or the Button Back pulls away from the Shell.

Common Causes

- Components not designed for your Button Machine.
- Paper that's too thick.
- The First Crimp wasn't completed.
- The Second Crimp wasn't completed.
- Foreign material or pieces of previously crimped Components lodged in the Dies.
- Worn or broken springs.
- Dies that need realignment.

What to Check

Begin by confirming that you're using Components designed for your Button Machine.

Before assembling another button, inspect both Dies carefully. Make sure no Shell, Button Back, Mylar, Artwork, or pieces of a previously attempted button are still lodged in either Die. Even a small piece of material left behind can prevent the Button Machine from crimping properly.

If you suspect the paper may be contributing to the problem, make a test button using plain, unprinted copy paper. Because there's no toner extending into the

Tuck Area, this simple test helps determine whether the problem is being caused by paper thickness or heavy laser toner.

Make sure both the First Crimp and the Second Crimp are completed before releasing the handle.

If the problem continues, inspect the springs, the Dies, and the Die alignment.

Problem #6

Shell Will Not Pick Up During the First Crimp

Symptoms

When the **First Crimp** is completed, the **Shell** remains in the pickup Die instead of staying in the upper Die for transfer to the **Second Crimp**.

Common Causes

- Components not designed for your Button Machine.
- Dirty pickup Die.
- Worn pickup spring or magnet (depending on the Button Machine).
- Dies that need realignment.
- Worn or damaged pickup Die.

What to Check

Begin by confirming that you're using **Components designed for your Button Machine**. Components that are slightly different in size or shape may prevent the Shell from being picked up correctly during the First Crimp.

Next, clean the pickup Die. Dust, paper fibers, toner residue, or other debris can interfere with proper Shell pickup.

Inspect the pickup mechanism for wear, following the recommendations provided by the manufacturer of your Button Machine. Depending on the design of your

Button Machine, this may include a pickup spring, magnet, or another pickup mechanism.

If the problem continues, inspect the Dies for proper alignment. A Die that's out of alignment may prevent the Shell from transferring correctly during the First Crimp.

Finally, inspect the pickup Die for wear or damage. A worn or damaged Die may no longer hold or transfer the Shell reliably.

Related Topic: See **Chapter 3 – Use Components Designed for Your Button Machine.**

Problem #7

Buttons Suddenly Stop Turning Out Correctly

Symptoms

Your Button Machine has been producing good buttons, but without warning the quality changes.

Common Causes

- A new box of Components.
- Different paper.
- Dirty Dies.
- Pieces of previously crimped Components lodged in the Dies.
- Changing from inkjet to laser printing.
- Mechanical wear.

What to Check

Start by asking yourself one question:

What changed?

Did you open a new box of Components?

Did you begin using different paper?

Did you change printers?

Have you cleaned the Dies recently?

Work backward until you identify the first thing that changed.

If nothing has changed, inspect the Button Machine for worn springs, worn or damaged Dies, or Dies that need realignment.

Chapter 5

Preventive Maintenance

One of the best ways to solve button-making problems is to prevent them from happening in the first place.

Most Button Machines require very little maintenance.

But developing a few good habits can prevent many of the problems discussed in this troubleshooting guide.

Store your Button Machine and Components in a clean, dry location.

Moisture can cause rust on steel parts, corrosion on Components, and damage to paper Artwork. If your Button Machine becomes wet, dry it thoroughly before using or storing it.

Keeping your Button Machine clean and dry will help ensure smooth operation and extend its service life.

Keep the Dies Clean

Paper dust, toner residue, and tiny paper flecks gradually build up on and around the Dies.

Over time, that buildup can increase friction during the First Crimp and affect button quality.

Periodically blow paper flecks from beneath and around the Dies using compressed air.

If necessary, wipe the Dies with a soft cloth dampened with isopropyl alcohol to remove stubborn residue.

Apply Stick Lubricant to the Crimp Die When Needed

A light application of stick lubricant on the beveled crimping edge helps reduce friction during the First Crimp.

Less friction allows the Artwork and Mylar to slide more freely around the Shell.

Only a light application is needed. Wipe away excess.

Store Mylar Properly

Keep your Mylar clean, flat, and free of dust.

I recommend storing unused Mylar in a small, sealed plastic bag until you're ready to use it.

A Final Thought

Every button maker encounters problems from time to time.
The difference between frustration and success is knowing how to find the cause.

I hope this guide helps make that process a little easier.

Wishing you years of smooth-running Button Machines...
...and thousands of great-looking buttons.

— Don Ratliff

HELPFUL RESOURCES

• Visit ButtonMakersWorld.com for additional troubleshooting articles, tutorials, videos, and downloadable resources.

• Watch free videos on YouTube:
https://www.youtube.com/@buttonmakersworld

• Try Button Design Studio at ButtonDesignStudio.com.

Button Design Studio was developed specifically for button makers. It automatically creates the recommended gap between the Artwork and the Cutline, leaving the hidden Tuck Area free of ink or laser toner. The result is less friction during the First Crimp, improved button quality, and reduced ink and toner usage. It also includes production-ready templates and tools designed specifically for Round, Square, Rectangular, and Personalized Sports Buttons.