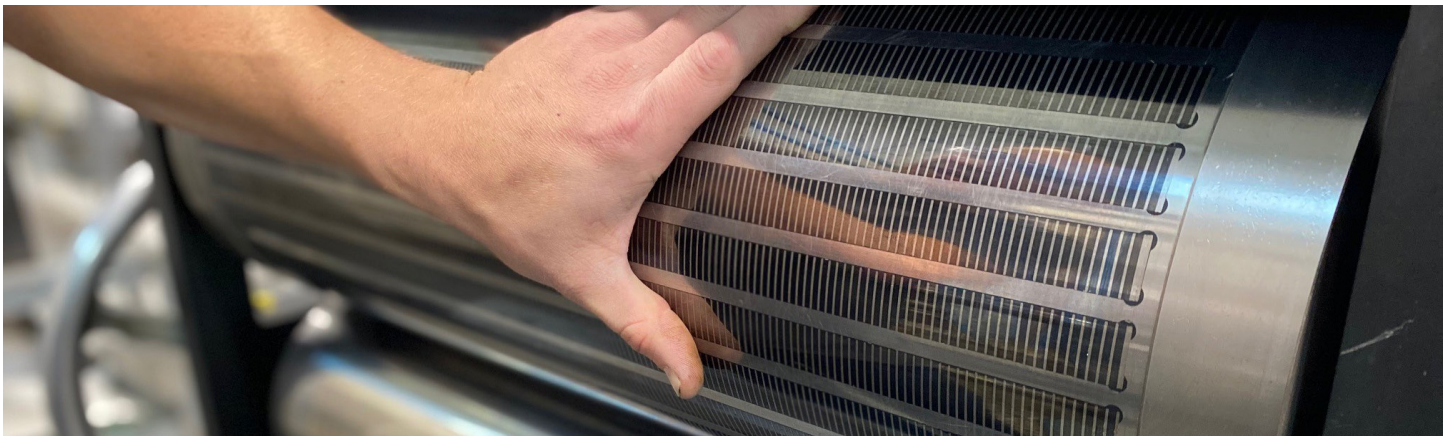
TROUBLESHOOTING YOUR DIE CUTTING PROCESS



Your machine is set up and you are ready to run a big job and…surprise, you aren't getting the cut you need to satisfy your customer! Die-cutting issues can be costly and oftentimes are not actually caused by the die. Figuring out the cause may take more time than you have to give. Evaluating the cutting performance and applying a temporary solution might be just the thing you need to get your job out the door. In this Tech Talk, we will provide some general guidelines to follow that can help you determine the best course of action when troubleshooting die-cutting to reduce costly downtime.

Always Handle Tooling With Care

PROPER HANDLING will maximize the life of your tools and ensure that they are ready to run when you need them. The sharp edges of the blades on cutting dies can be easily damaged, so take care when handling them from the moment the box is opened all the way through to cleaning and storing the die.

Use Proper Pressure When Running

Be sure to run with the least amount of pressure needed to keep the die cutting well as excessive pressure can wear the die prematurely. As a best practice, be sure to use **PRESSURE GAUGES** in the die station so that the proper pressure levels can be easily set and then monitored by your operators.

Check for Variance in Your Material

Another common cause of die-cutting issues is the material that is being cut. Substrates and liners have variances that are indicated in the Technical Data Sheets from the supplier. Checking those specs against the die order may show a difference that needs to be addressed. Liner weights are a typical spec provided, but liner thickness is necessary to calculate the cut settings. When ordering your dies, always provide the liner thickness to your Wilson rep.

How to Troubleshoot Common Die-Cutting Issues

What happens when you've done your best to optimize the life of your tools, and yet while under pressure to finish a job the die is just not "making the cut?" Here are several common die-cutting problems and what to try in order to fix them both temporarily and in the long term.

Issue #1: Matrix Breaking

Issues in your die configuration may cause the waste matrix to break. If the issue is in the layout, it is likely caused by one of these: not enough space between cavities or sharp points/corners. Here's what to do in these situations:

Check the space between cavities on your die. Is the waste breaking where the matrix is the narrowest? For a quick fix, try foaming the die and stripping the waste away right at the die. For a permanent fix, redesign the tool with greater spacing to strengthen your waste matrix.

If your die shape has sharp points or corners, is the waste matrix tearing at these specific points in the matrix? If using a paper substrate, a stop gap solution may be to try adding a lamination to eliminate tearing and to strengthen the matrix. Foam the points to help push them down on the web or reverse the die direction to see if it improves. Stripping directly off the die or at an angle may help also. Long term solution would be to redesign the shape to round the sharp points.

If you're noticing the issue occurring constantly, it may be due to a low spot on your blades. Check for signs of damage or wear. If cutting to a liner, using a stepped or adjustable anvil may get you through in the meantime until your die can be retooled.

Issue #2: Labels Lifting

If you experience labels or parts lifting with the waste matrix, there are a few common areas to check:

A minor liner variance or a difference in material could be causing your issue. You may notice the problem happening randomly or constantly—a minor variance is more likely to cause random lifting, where a larger variance or change in the material may cause it to happen consistently. Measure your liner and compare it to your supplier specifications. Using a stepped or adjustable anvil may get you through your run. For long-term solutions, start with a heavier liner impression, select a material with less variance, or retool your die to the correct material.

Low tack adhesives or removable adhesives can also cause this problem. Foam your cavities and strip the waste right off the die. You may need to select a different material or have your die redesigned to make waste removal easier.

Aggressive adhesives may also be the culprit in this situation. In this case, you'll want to confirm that the die cut edges are clean and that the adhesive is not "stringing" when it's stripped away. Be sure to strip off the die as soon as cuts are complete. You can also retool your die to add Die Slide non-stick coating. Consult with your Wilson rep if you're experiencing this issue.

Labels lifting on one cavity or particular area could be caused by damage to your die. Carefully inspect the tooling for noticeable damage. If your die is new, contact your Wilson representative right away. If you're using a die that's been in service for a while, a stepped or adjustable anvil may help temporarily while your Wilson representative works with you on a permanent solution.

Issue #3: Die Cutting Too Deep or Die Stopped Cutting

These problems are usually caused either by the die or the material being cut. Here's what to look for.

Liner variance or material liner change. This could be the cause of issues that occur either randomly or constantly during the converting process. Compare your material specs to your die order specs and review the samples that came with your tool to determine if this may be the cause. Using a stepped or adjustable anvil can help get you through your current job, and retooling the die to the new material can provide a long-term fix.

A die that is consistently cutting too deep may indicate that your bearers or anvil are worn and in need of repair. Like many other situations, a stepped or adjustable anvil can provide a stop-gap measure, but you'll want to change the setting on your die and send your anvil in to Wilson for resurfacing.

Dull blades may be the root of your issue if the die is not cutting the face stock but you are seeing cuts in the liner. In this case, solid tools will require resharpening and flexible dies must be replaced before you can resume cutting. If your tool was cutting and then stopped, a stepped or adjustable anvil may help short term, but you'll want to reorder your flexible tool or have your solid die retooled to fix the issue.