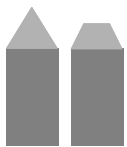


Eliminate Dust, debris, hairing chunks or feathering.



No matter what you call it the results are the same. The finished product is ugly, the parts contain debris contamination a totally unacceptable by product especially in the food packaging industry.

So what are the causes of this phenomena?



Damaged rule is the most common cause. So let's investigate what processes flatten the top of the rule removing the sharp edge.

Now how does the rule get damaged? The answer is that most make-readies on press do not take care to protect the cutting edge of the steel rule.

1. Wrong make-ready materials.
2. Poor press maintenance.
3. Too much pressure.
4. Bad rubbering techniques.

These 4 examples contribute to over 90% of the reasons the steel rule gets damaged and causes the debris to exist on the side of the product.



Good



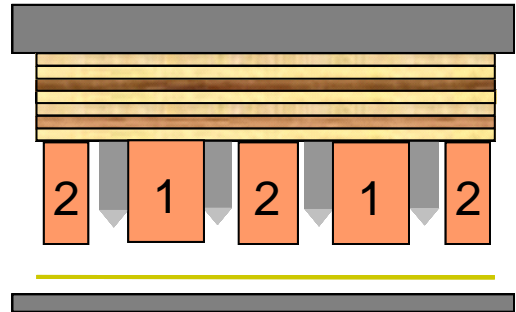
No Good

Masking tape, duct tape, office tape, packing tape or any other tapes, do not make good make ready tapes for the simple reason that they have no controlled thickness.

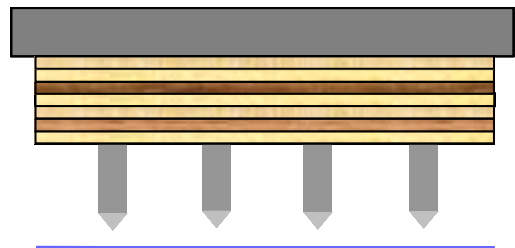
Processed make-ready tapes come in controlled thicknesses from .0005" - .006". Used in conjunction with precise calipers of make-ready papers the cutting edge of the rule can be fully protected.



Unbalanced rubbering can also cause premature wear on the rule. Lateral pressure being pushed against the side of the rule allowing it to rub against the cutting plate. This movement is extremely slight but no matter how small, over time and multiple strikes, the rule wears. Tight slot areas are most susceptible due to too much rubber in the slot.



Rubber #1 fills the slot completely so when it is compressed it can only put force on the side of the rule. Rubber #2 has clearance from the rule allowing the pressure from the #1 rubber to force the rule into the gap.

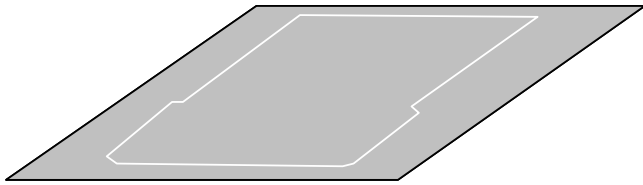


An uneven cutting plate on top of a backing plate will also cause premature wear on the steel rule. The uneven plate will also develop gouges which allow the rule and diecut product to "sink in" causing even more debris to accumulate.

Damaged Plates

Once the cut plate is damaged the material will not cut cleanly, the material will be pushed into the plate. The material then embosses, rips and tears at the point of pressure further compounding the debris problem.

Once the plate is damaged the make ready becomes more difficult and you end up chasing your tail trying to get the parts to cut cleanly.



This picture shows a plate with the last die cut part impressed into it.



The indentation of the plate causing more debris problems.

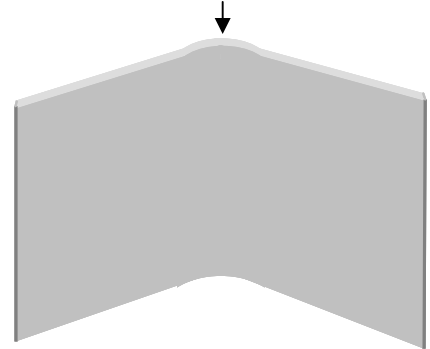
Once the plate has been indented by the steel rule combined with the flattened cut edge of the rule and the multiple plate indentations, the debris problem gradually gets worse.



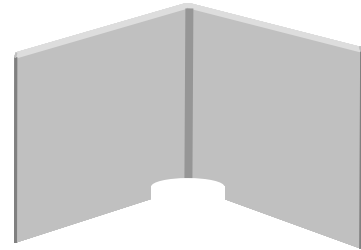
The parts do not cut completely through the material leaving nicks or uncut material on the parts.

Bends in rule

When rule is bent some distortion occurs and the height of the rule at the corner changes. Usually the rule is slightly higher at the bend point. This causes a number of problems, the rule at the bend point damages the cutting plate and the rule also becomes dull. This causes uneven cutting, prompting more patch up work.



This picture shows an exaggeration of the height change at the point of the bend. But you can see the problems a change like this would make on Press. This is an even bigger problem when the part is to be kiss cut.



By notching out the bottom of the rule at the point of the bend the stress on the rule as it is bent is reduced greatly. This stress reduction reduces the distortion and height change in the cut height.

In order to continue to cut materials with reduced debris, hairs and feathery dust it is important to protect the cut edge of the rule. This greatly increases die life and reduces the debris on the die cut part.

These methods apply to all type of presses, and all types of materials. These are only a few suggestions designed to help reduce debris build up.