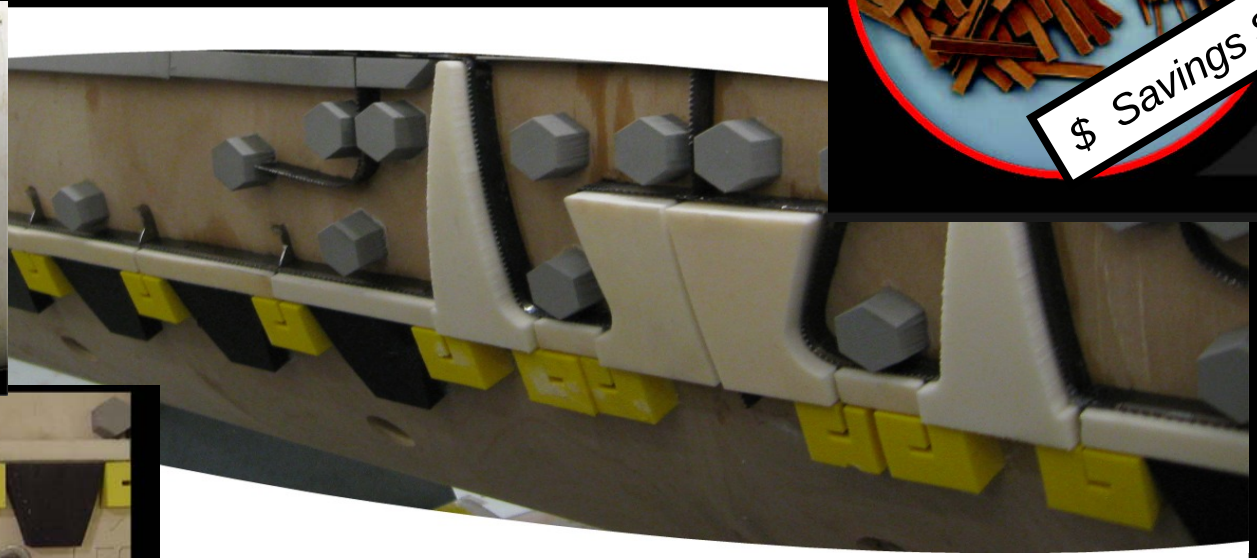
A Rotary Die and Diecutting Innovation

Container Graphics' MicroTrim ™

Container Graphics Corporation



Benefits the Corrugated Converter & Mother Earth

Container Graphics' MicroTrim ™

- **Runs Faster**

Container Graphics' MicroTrim ™

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- **Stripping is Dramatically Improved**

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- **Reduced Trim and Internal Scrap in Load**

Container Graphics Corporation

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Container Graphics Corporation

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CGC Container Graphics Corporation

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Container Graphics Corporation

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- **Reduced Impression**

Container Graphics Corporation

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- **Reduced Impression**
- **Improved Blanket Life**

Container Graphics Corporation

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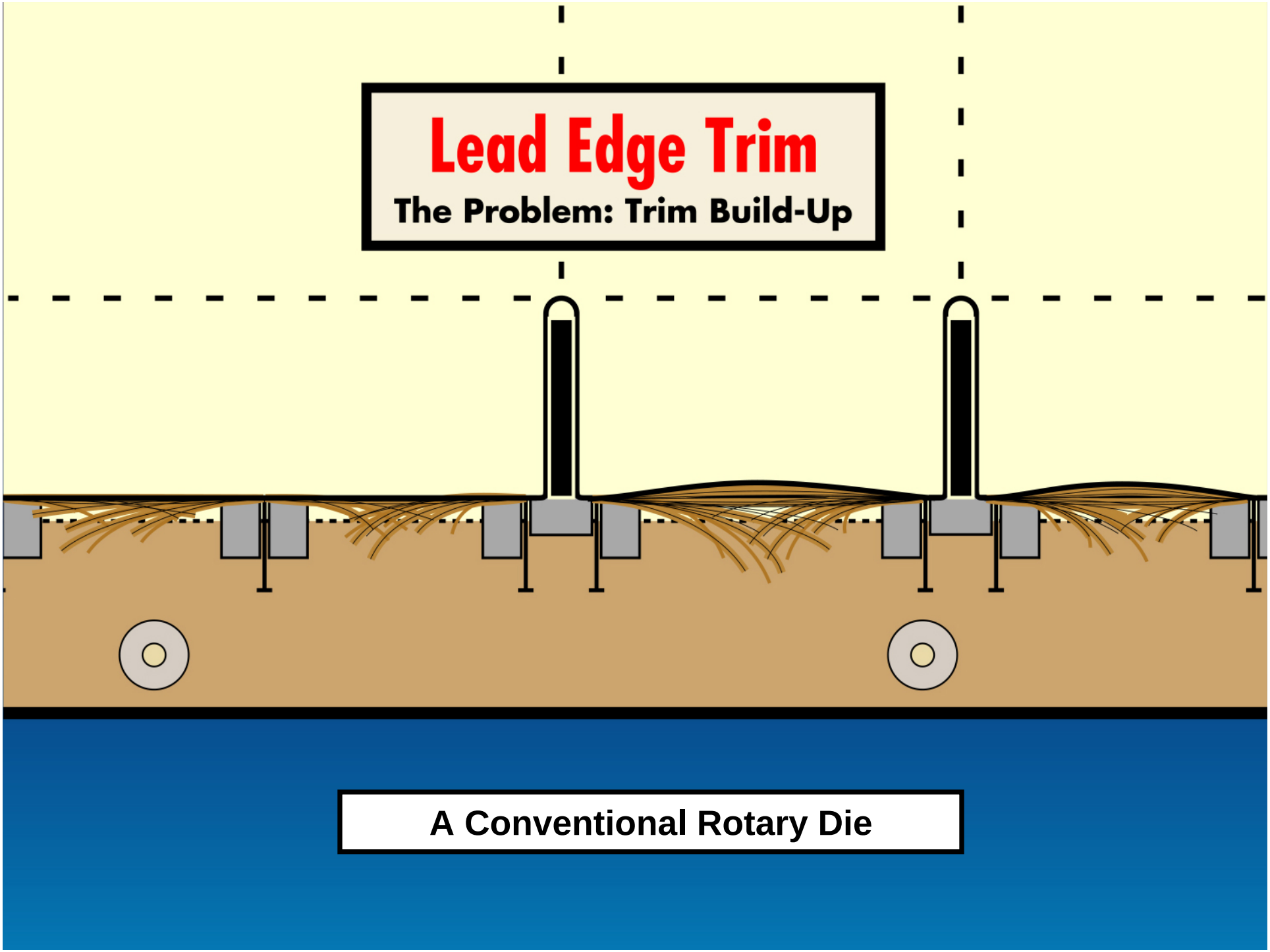
CGC Container Graphics Corporation

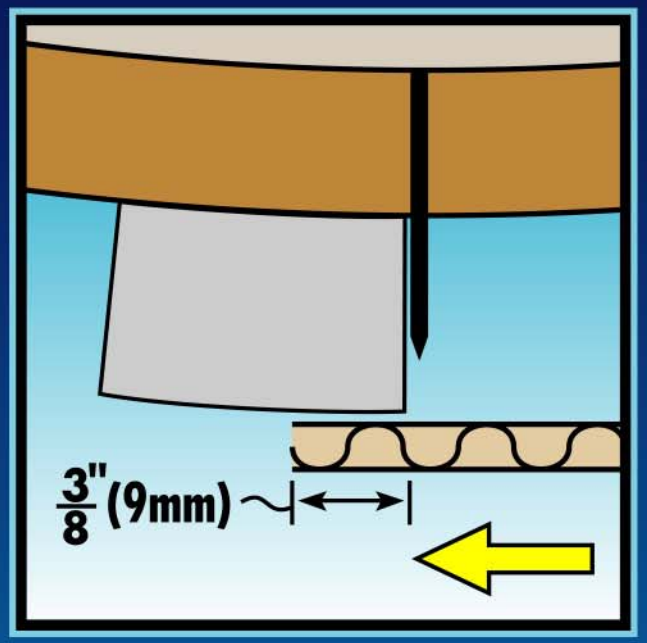

Lead Edge Trim
The Problem: Trim Build-Up
A Conventional Rotary Die

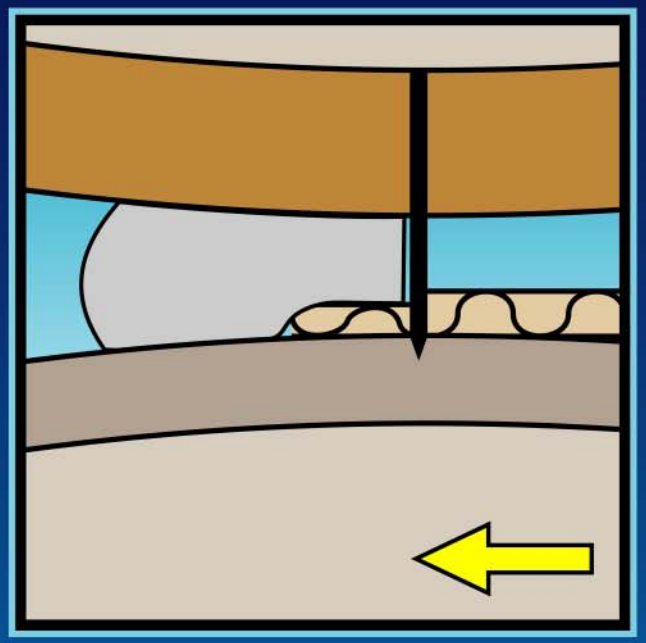
Background

A Conventional Rotary Die

Trim Build-Up

What happens?

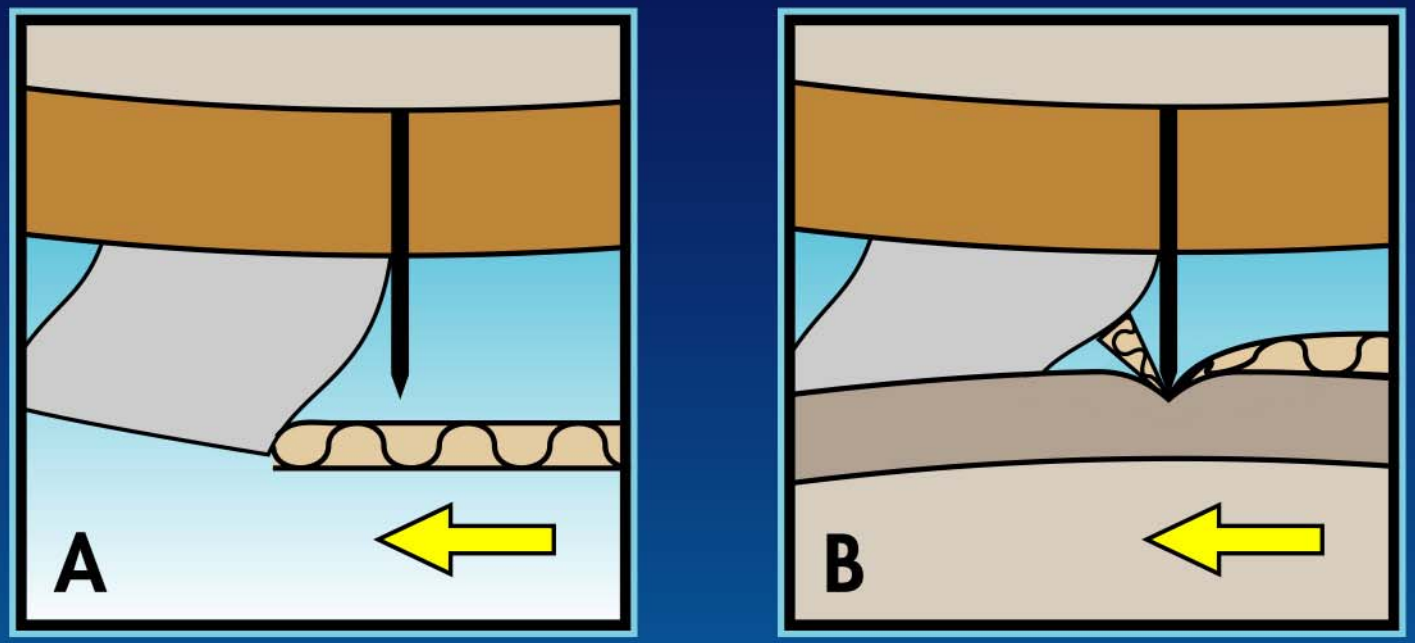




A Conventional Rotary Die

Trim Build-Up

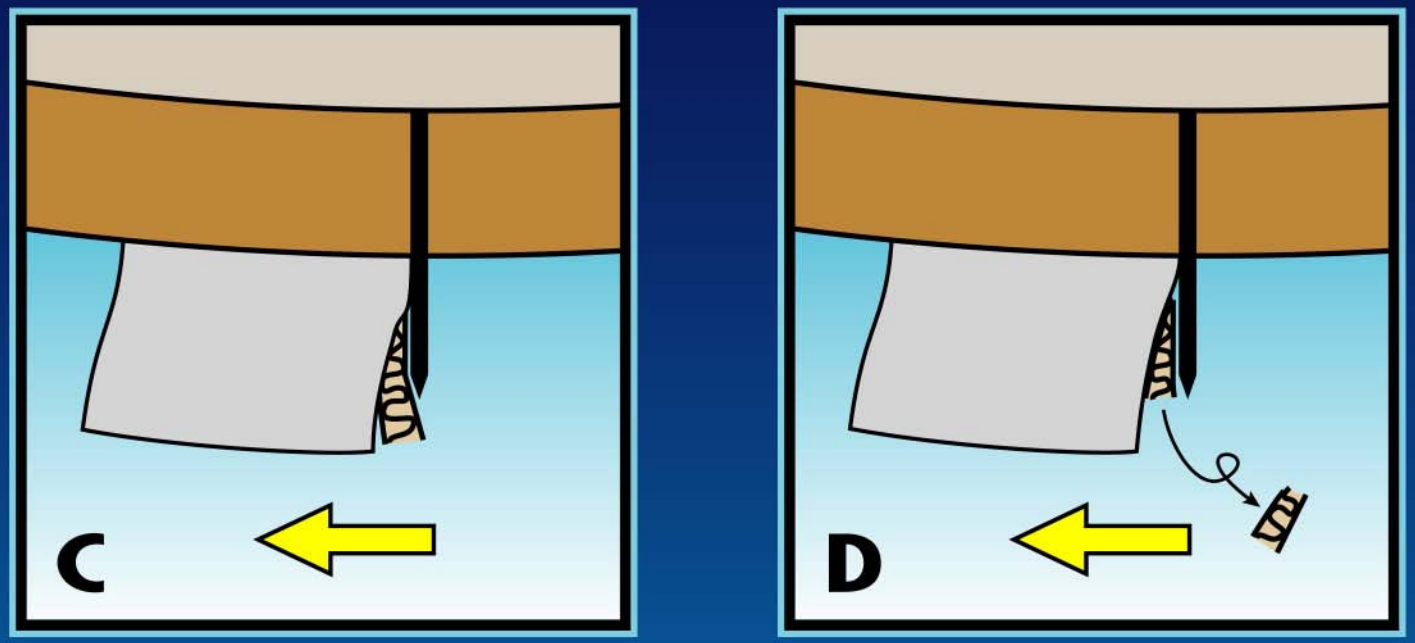
What really happens.



A Conventional Rotary Die

Trim Build-Up

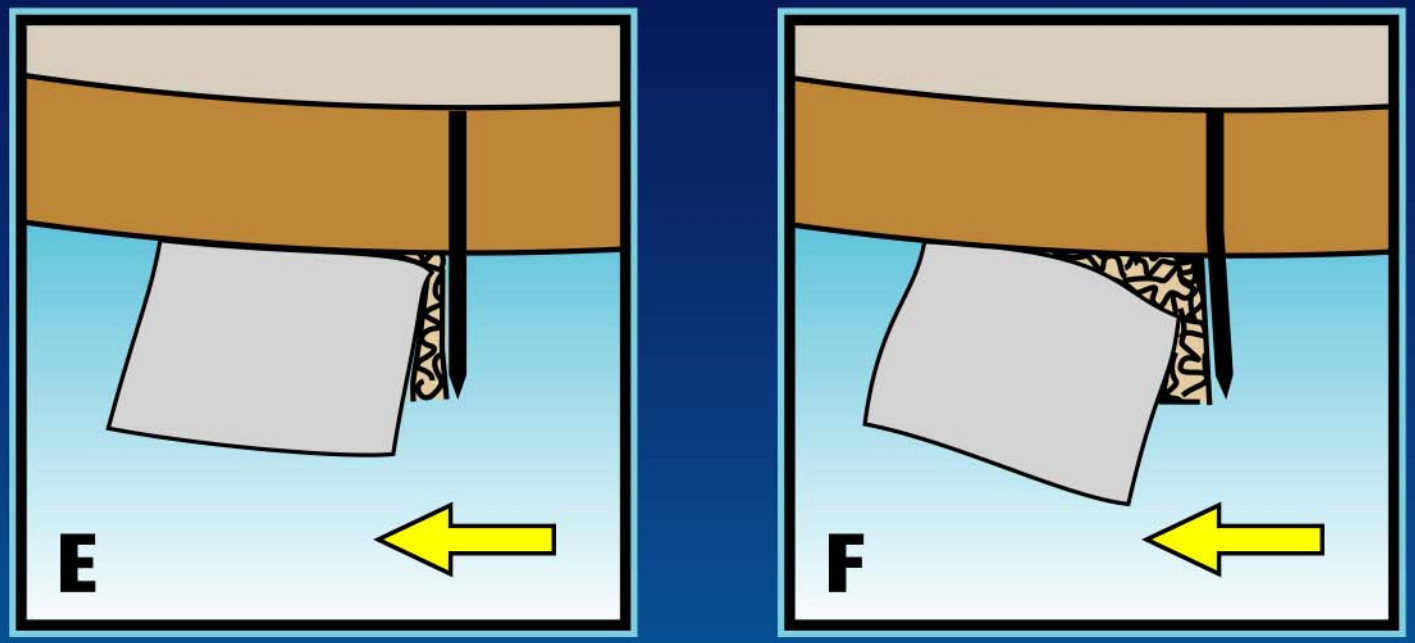
The plot thickens.



A Conventional Rotary Die

Trim Build-Up

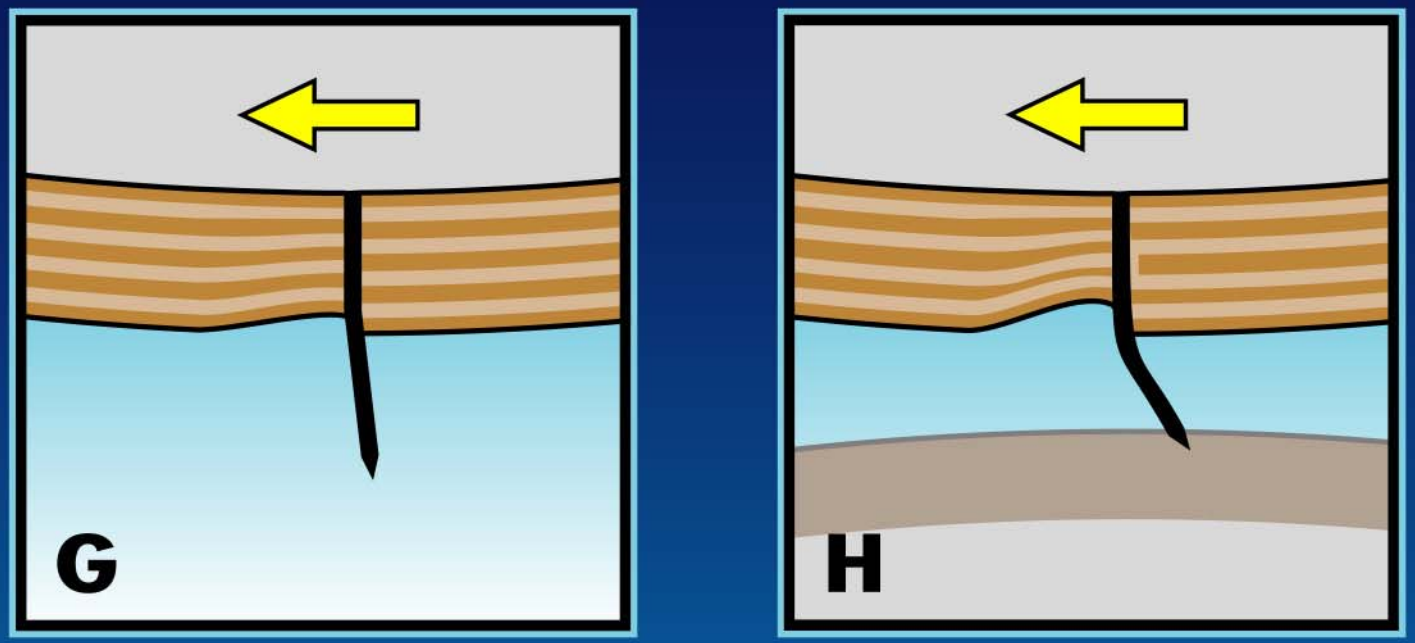
Bad becomes worse.



A Conventional Rotary Die

Trim Build-Up

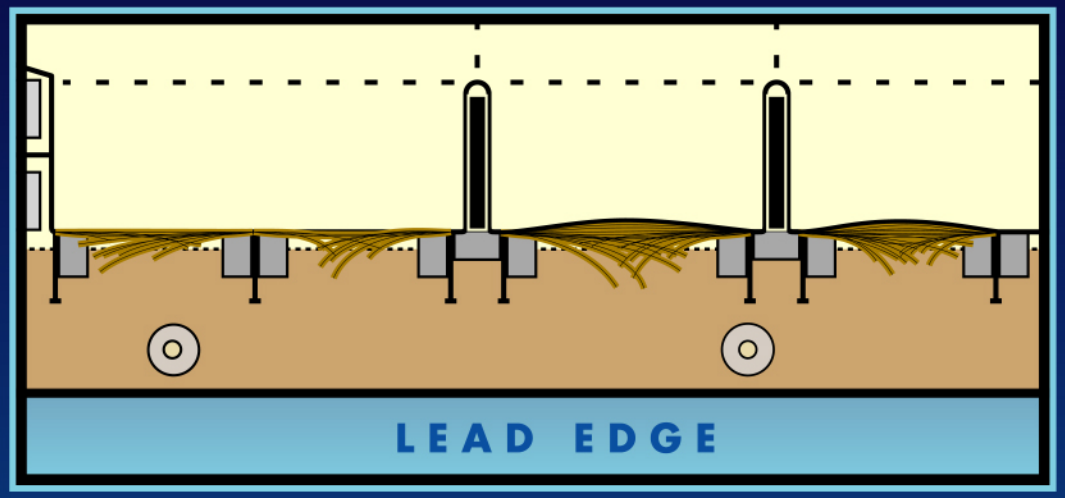
The consequences.



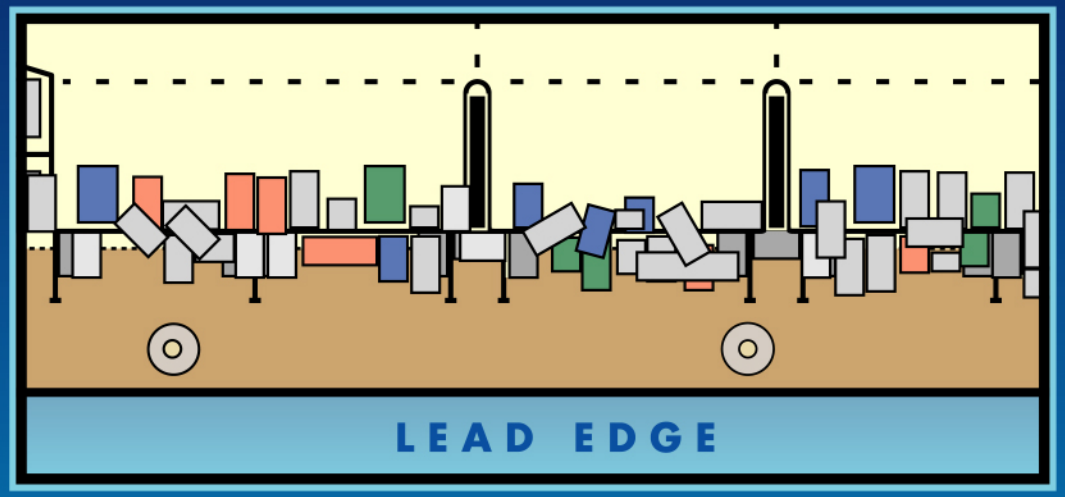
A Conventional Rotary Die

Anvil Deflection Affects Cut Ability

The problem:
Trim buildup.



Operator
Adds rubber.



A Conventional Rotary Die

Conventional Die Trim Issues Lead to:

- Broken Dieboard Bridges
- Broken or Bent Cutting Rule
- Trim Rubber Torn Off of Die

$$$$ Die Repair or Die Replacement $$$$

A Conventional Rotary Die

Background

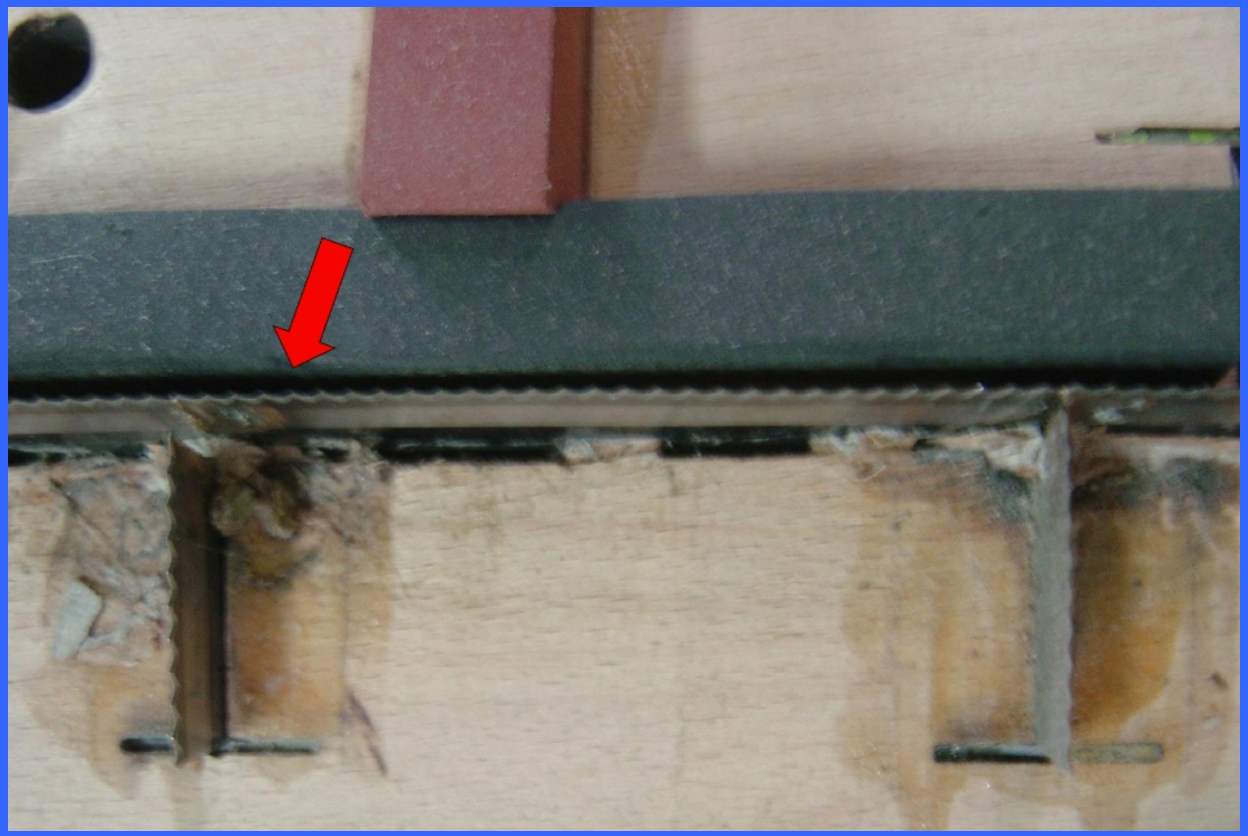
A Conventional Rotary Die

Lead Edge Trim Buildup

Background

A Conventional Rotary Die

Broken Dieboard Bridges / Bent Cutting Rule



Background

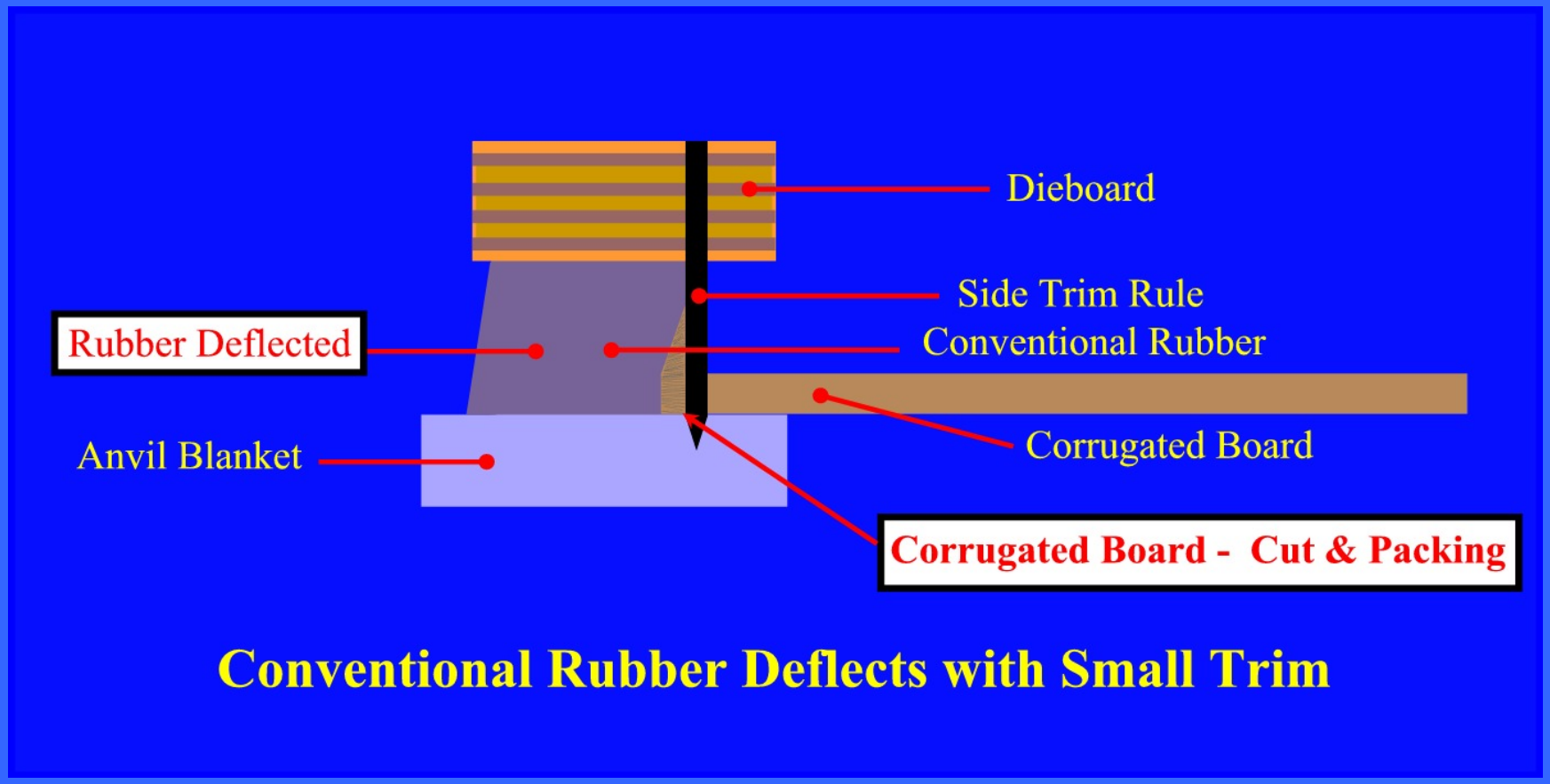
A Conventional Rotary Die

Excessive Rubber Added

Background

A Conventional Rotary Die

Similar Issues Exist with Trail Edge Trim and Side Trim



A Conventional Rotary Die

Conventional Rotary Die

Corrugated Board	Minimum Trim Allowance
Single Wall	3/8”
Double Wall	½”

A Conventional Rotary Die

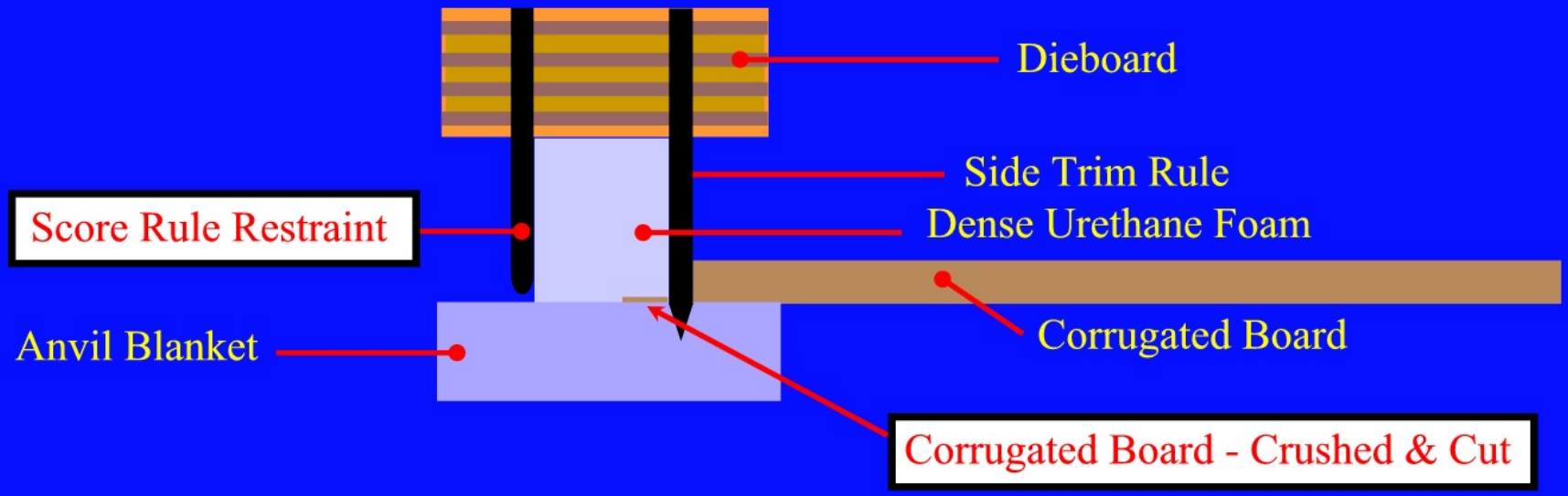
The
Rotary Die and Diecutting Innovation

Benefits the Corrugated Converter & Mother Earth

Container Graphics' MicroTrim ™

Innovation Construction and Features

General Concept



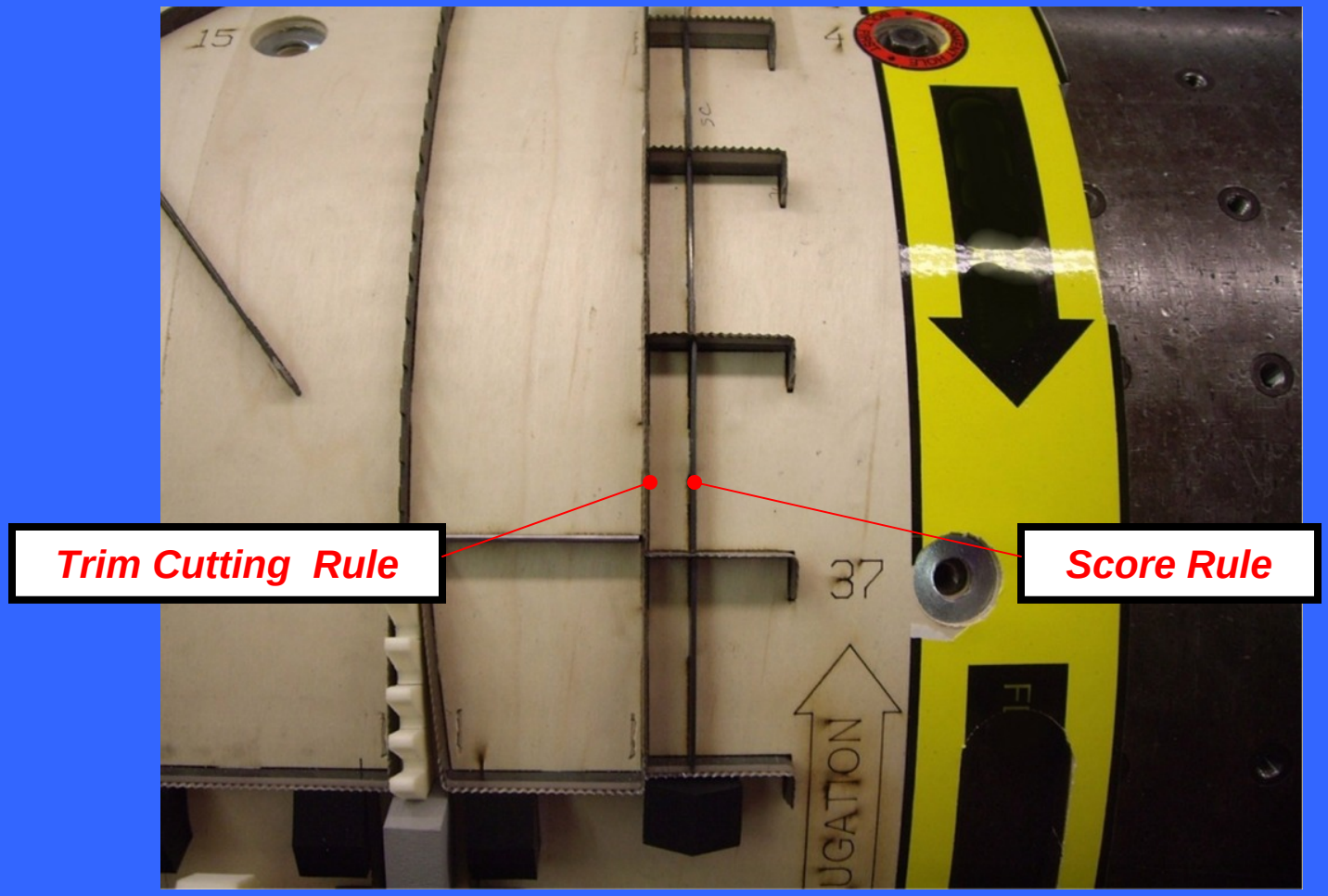
Innovation: Retraint and Dense Urethane are Key To Cutting and Strippping

Innovation Construction and Features

General Concept

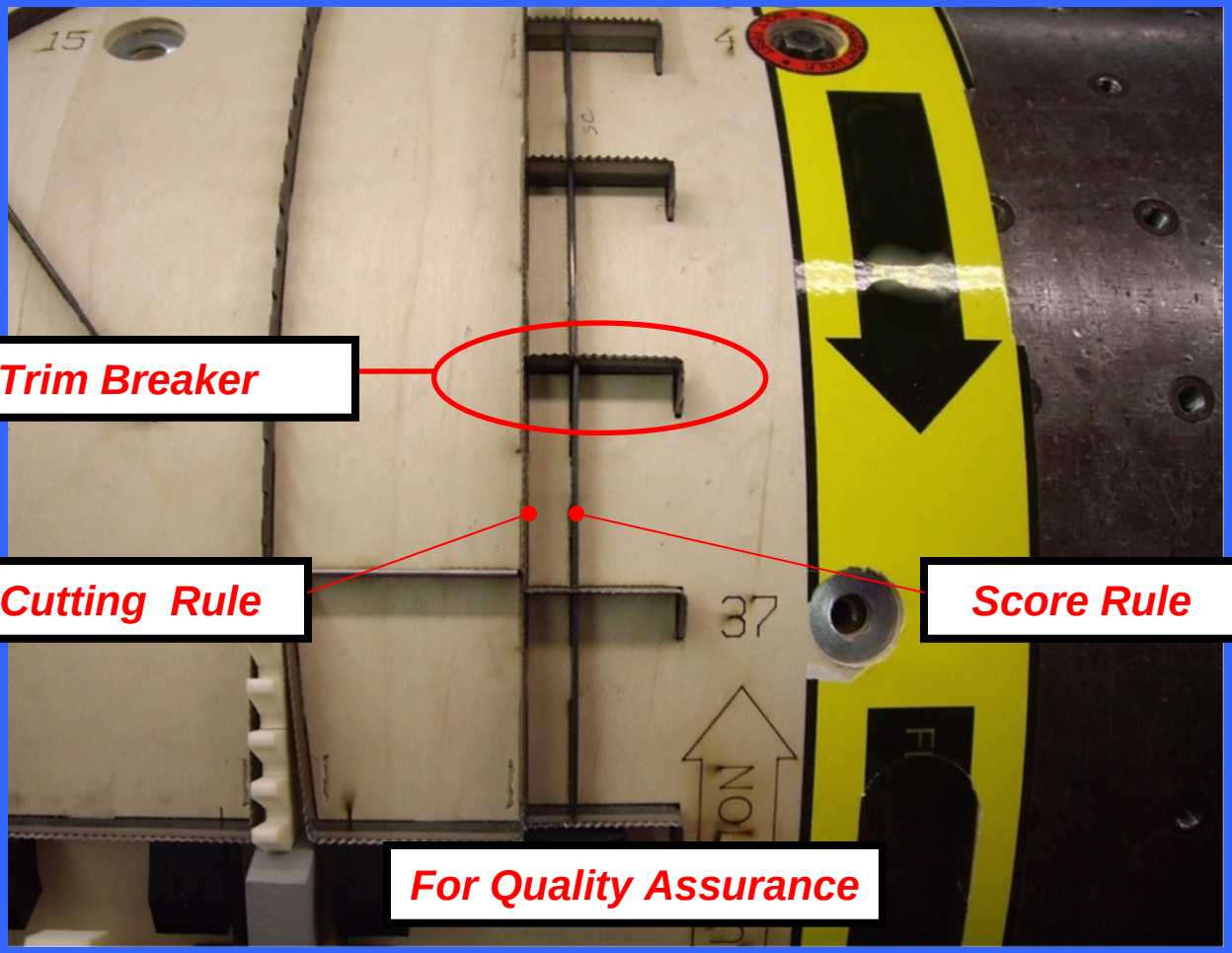
Innovation Construction and Features

Score Rule Placed Parallel to Trim Cutting Rule



Innovation Construction and Features

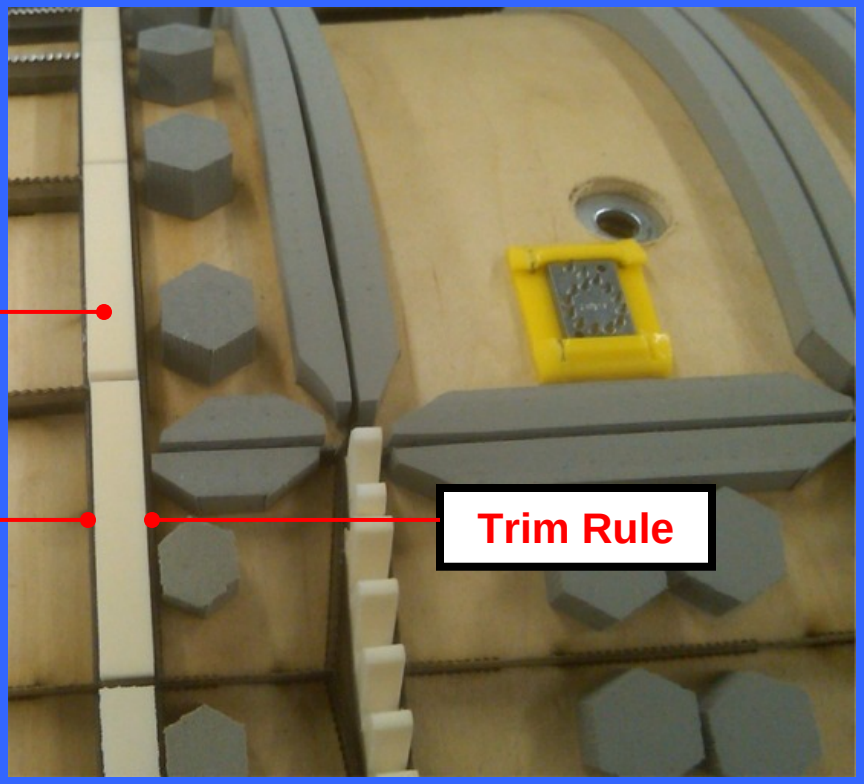
L- Shaped Trim Breakers



Innovation Construction and Features

Dense Urethane Foam added between Trim Cutting Rule & Score Rule

Dense Urethane Foam



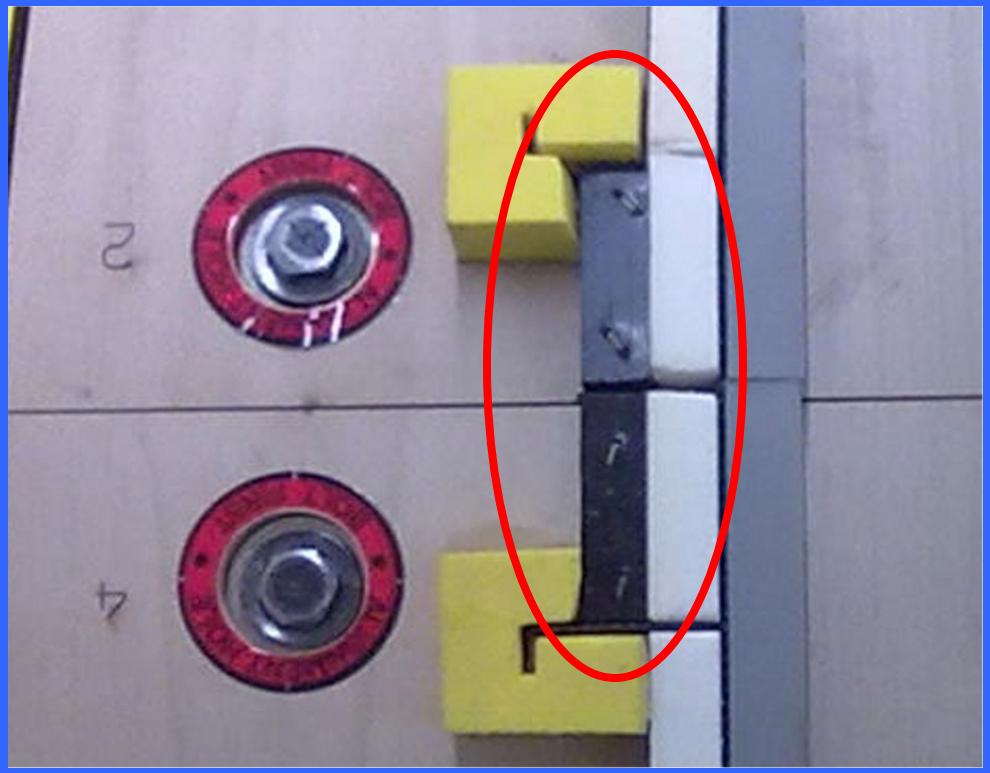
Score Rule

Trim Rule

Score Rule acts as a Restraint to keep Dense Urethane Foam from Deflecting Away from Trim Cutting Rule

Innovation Construction and Features

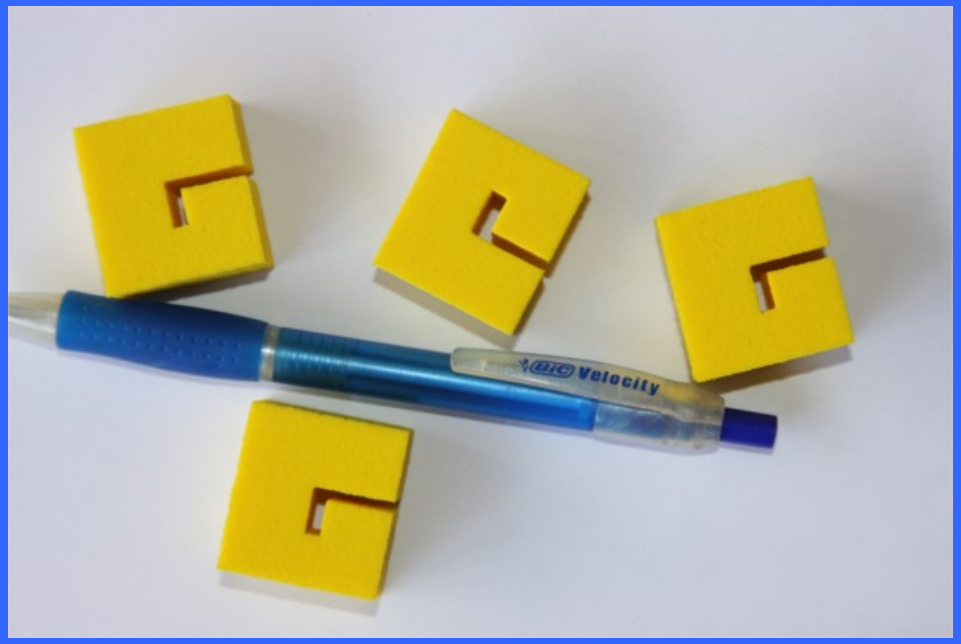
Surface Restraint at Dieboard Join Line

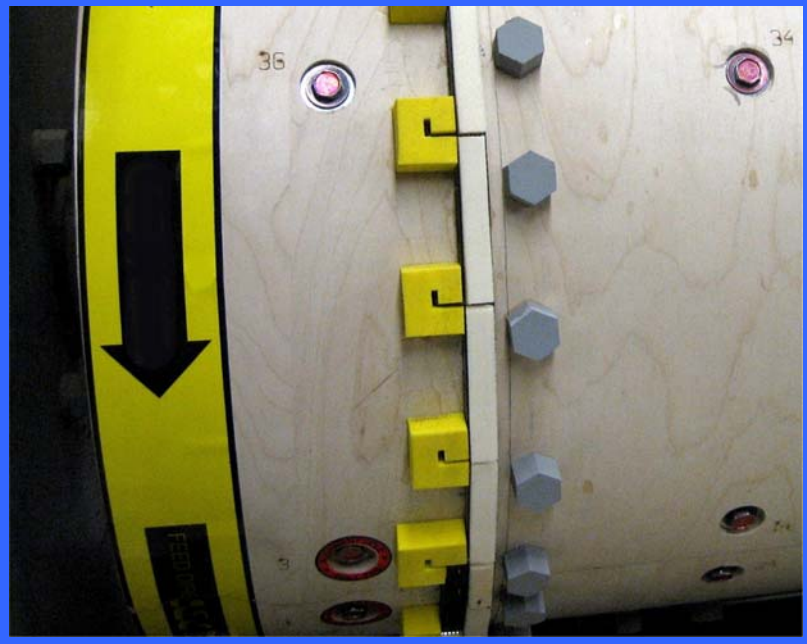


Eliminates Additional Bridges at Join Line that Might Weaken the Dieboard

Innovation Construction and Features

Trim Rubber Completely Surrounds Trim Breakers

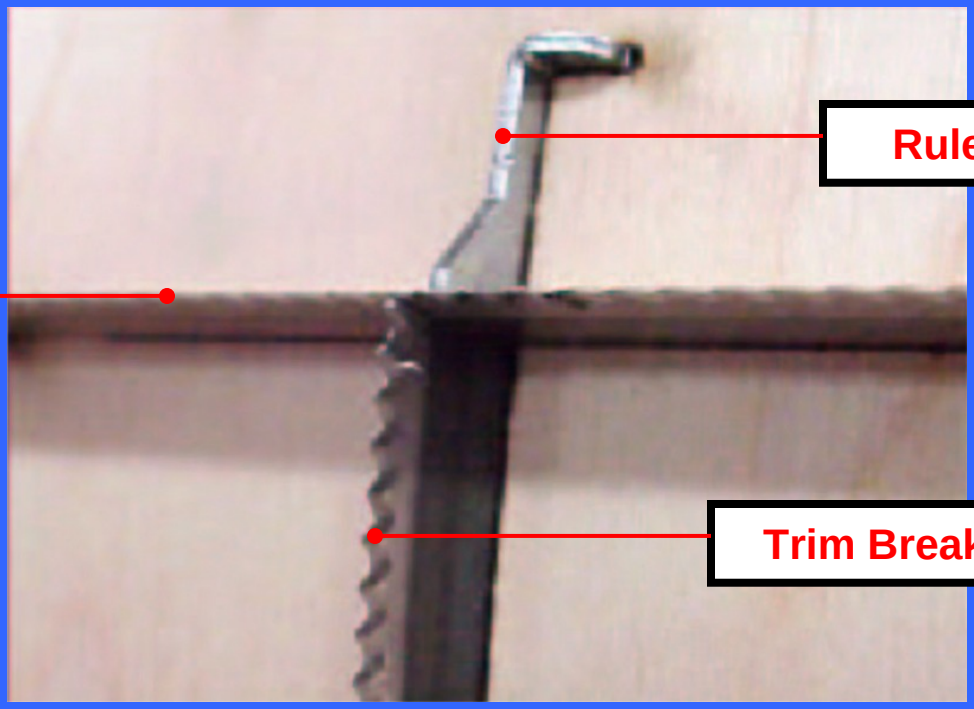




Eliminates Issues during Press Setup

Innovation Construction and Features

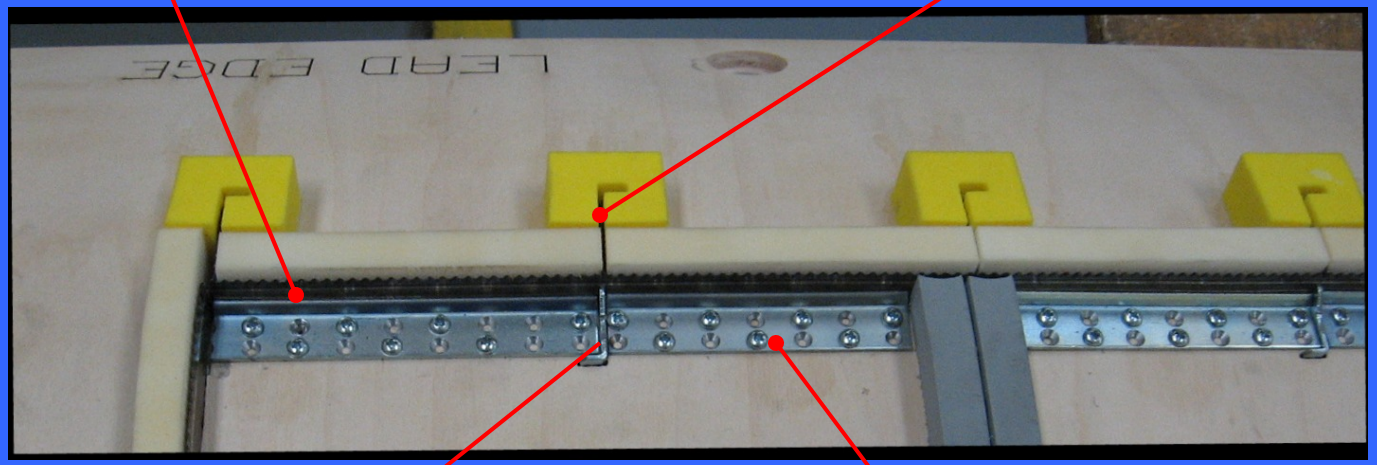
Rule Support Buttresses on Lead Edge



Prevents Deflection of Lead Edge Knife

Innovation Construction and Features

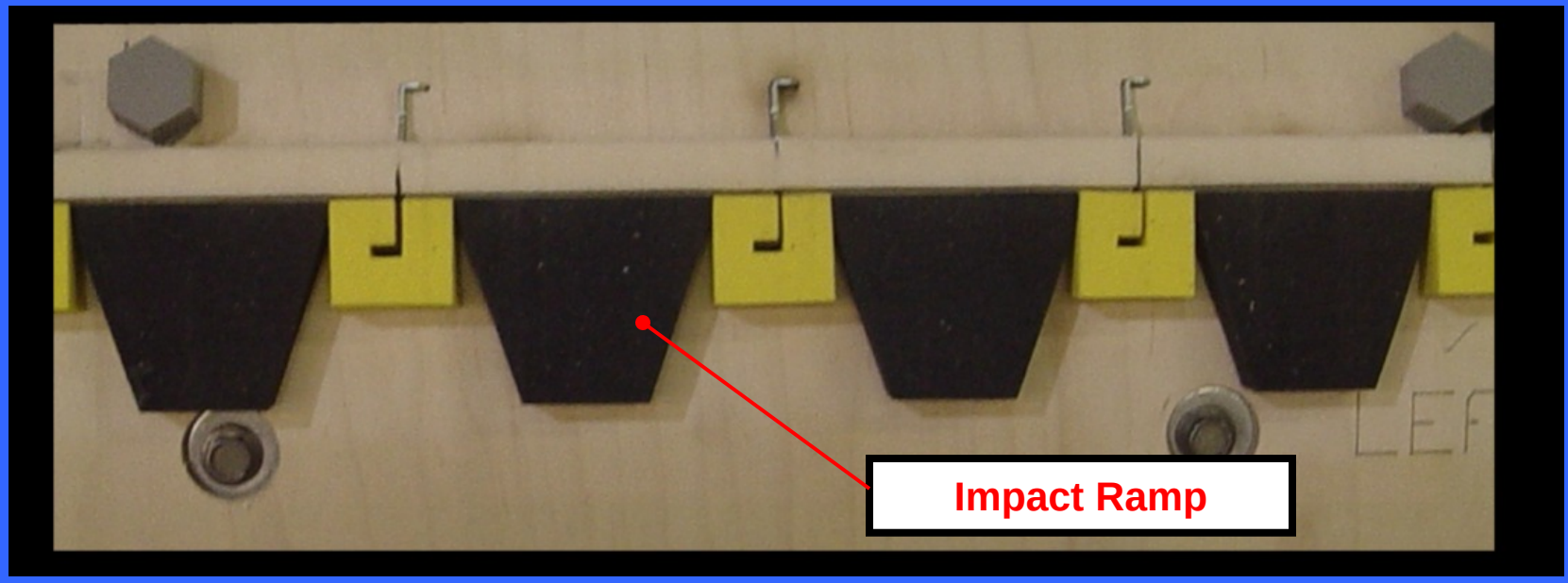
Rule Support on Lead Edge



Prevents Deflection of Lead Edge Knife

Innovation Construction and Features

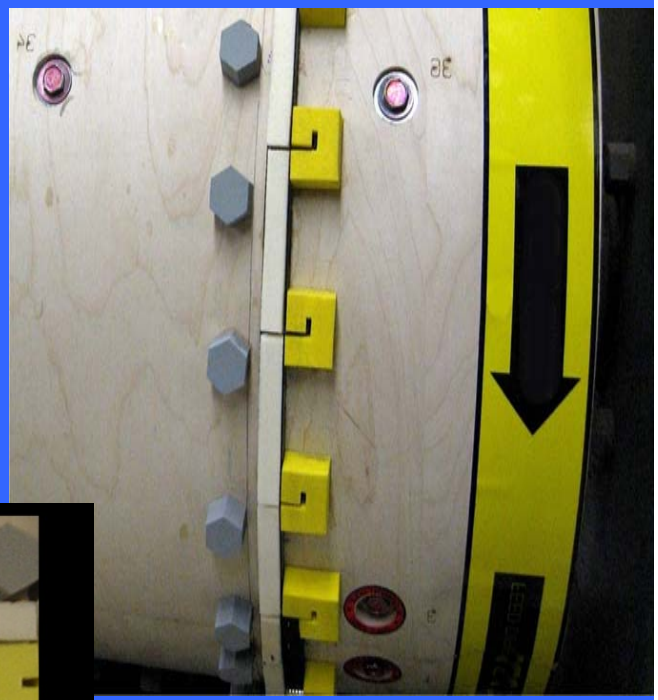
Lead Edge Impact Ramp



Reduces Lead Edge Impact Forces

MicroTrim's Construction and Features

- Score Rule with Urethane Parallel and Tight to Trim Cutting Rule
- Surface Restraint at Dieboard Join Line
- *L-Shaped* Trim Breakers
- Full Rubber Surrounding Trim Breakers
- Rule Support Buttresses on Lead Edge
- Lead Edge Impact Ramp



A Rotary Die and Diecutting Innovation

- Runs Faster
- Stripping is Dramatically Improved
- Reduced Trim and Internal Scrap in Load
- Helps Reduce Lead Edge Issues
- Paper Cost Savings (Trim to 1/8” or less)
- Enhances Total Die Performance
- Reduced Impression
- Improved Blanket Life
- Sustainability

A Rotary Die and Diecutting Innovation

Runs Faster

- **Up to 30% Speed Increase has been Realized**
- **Speed capability usually limited by Diecutter Maximum Speed or other Equipment Limitations**

A Rotary Die and Diecutting Innovation

Reduced Trim and Internal Scrap in Load

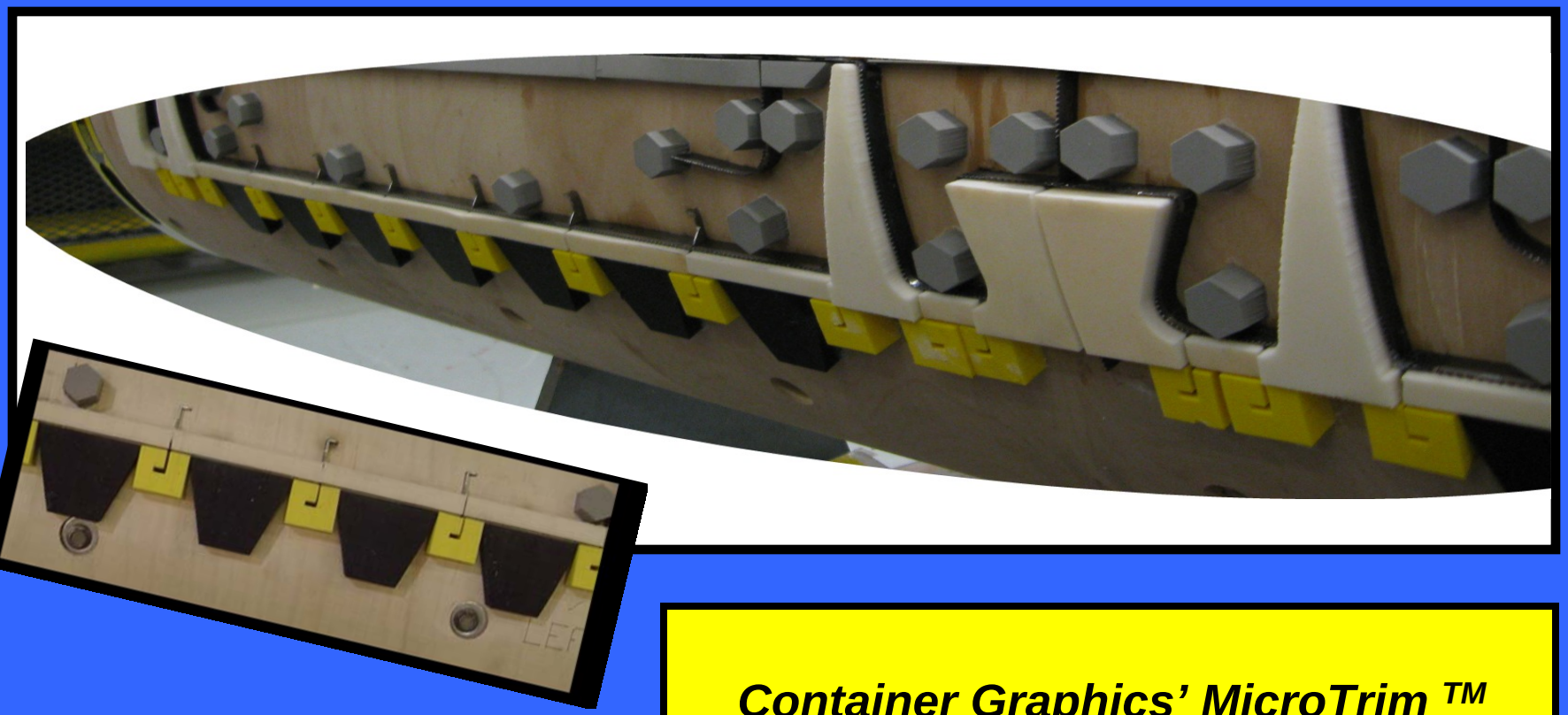
A Rotary Die and Diecutting Innovation

Container Graphics Corporation

CGC's MicroTrim On Press

A Rotary Die and Diecutting Innovation

Helps Reduce Lead Edge Issues



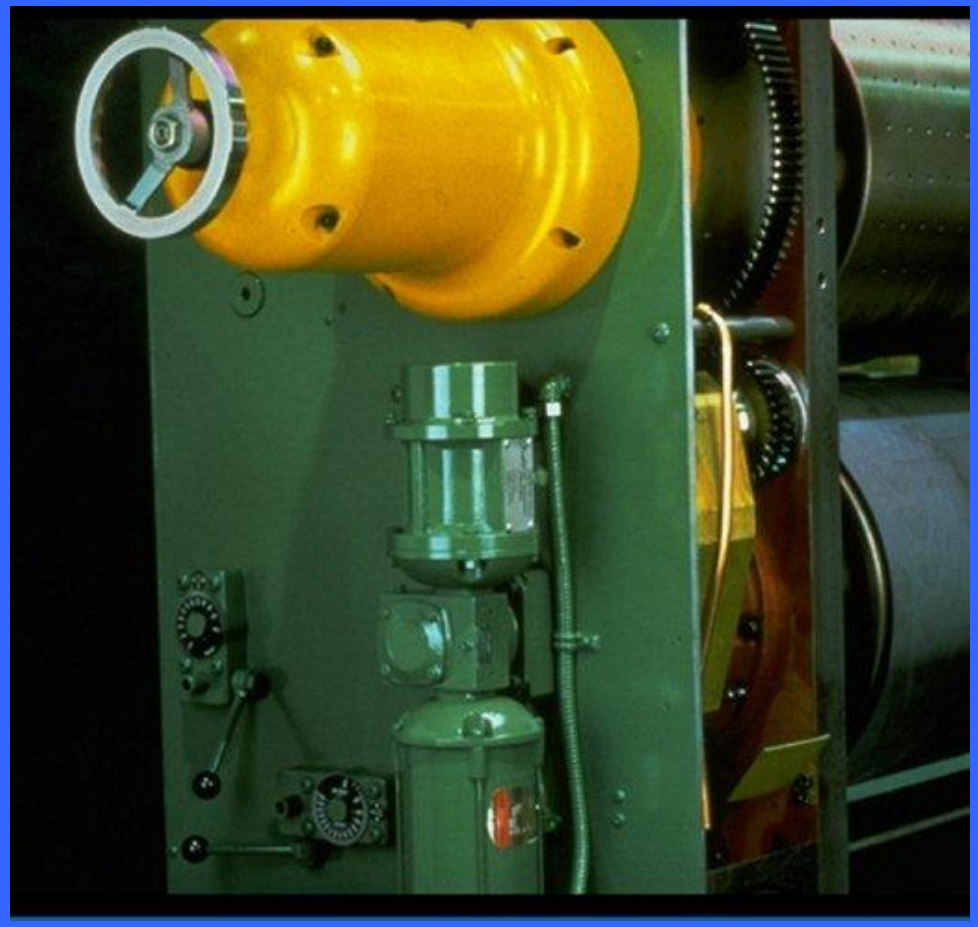
Container Graphics' MicroTrim ™

A Rotary Die and Diecutting Innovation

Paper Cost Savings (Trim to 1/8” or less)

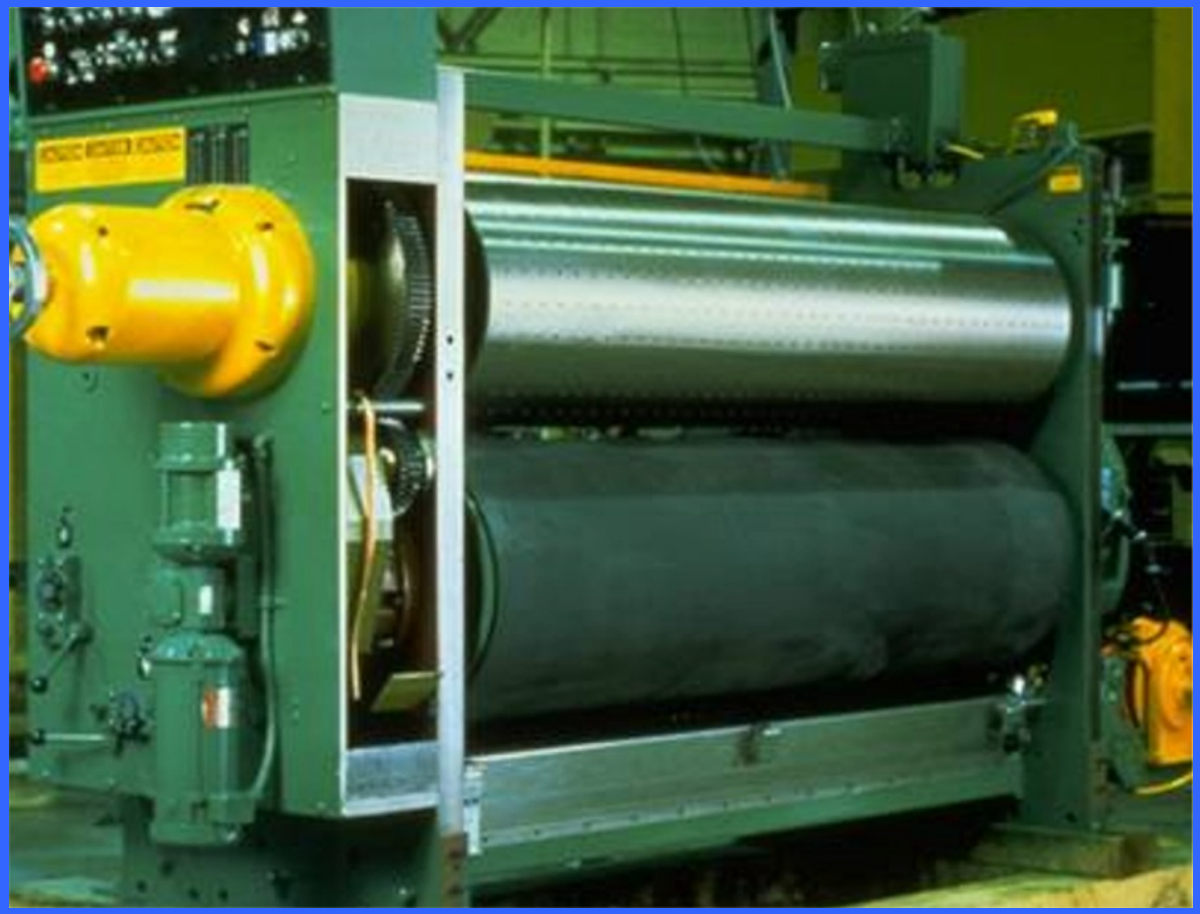
A Rotary Die and Diecutting Innovation

Reduced Impression



A Rotary Die and Diecutting Innovation

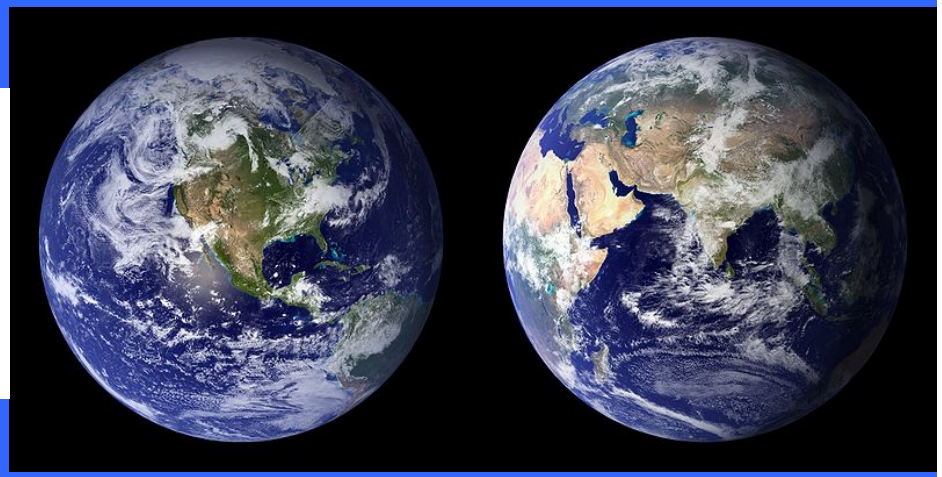
Reduced Impression / Improved Blanket Life



Innovation Benefits

Sustainability

- **Trim Reduction = Reduced Paper Waste**
- **Higher Productivity = Reduction in Additional Wasted Resources**
- **Improved Product Quality = Reduction in Downstream Wasted Resources**
- **Less Impression = Improved Anvil Blanket Life = Reduction in Wasted Resources**



Innovation Benefits

- Runs Faster
- Stripping is Dramatically Improved
- Reduced Trim and Internal Scrap in Load
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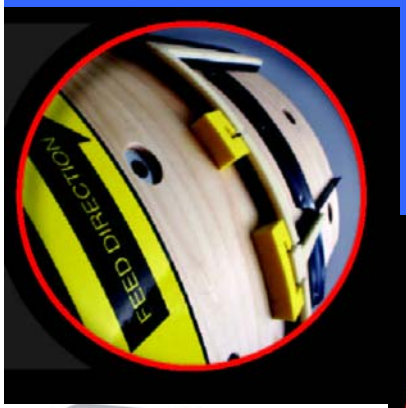
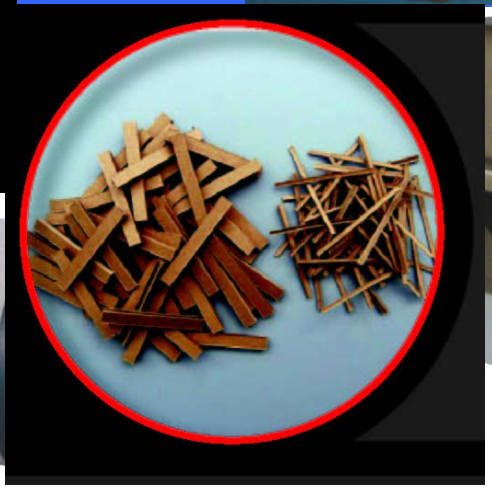
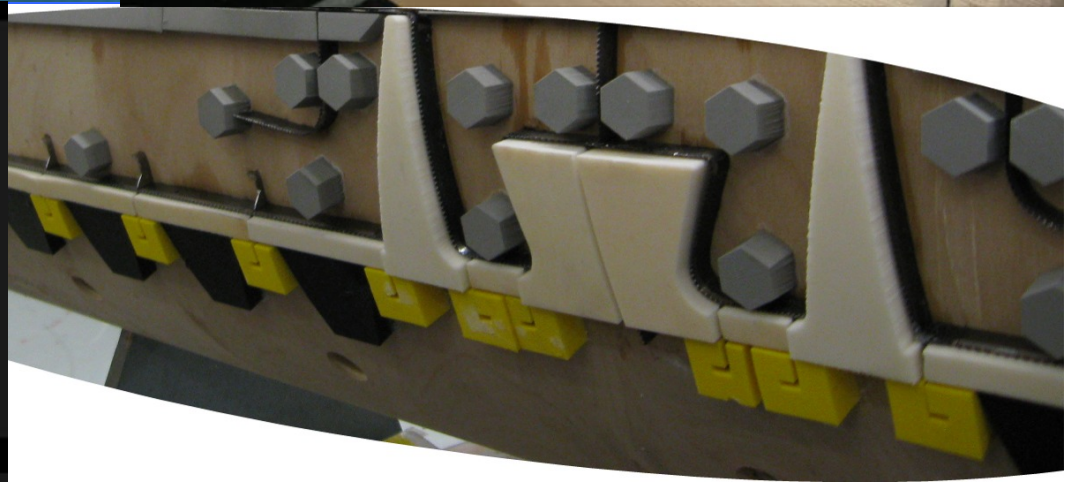
- Reduced Impression
- Improved Anvil Blanket Life
- Sustainability

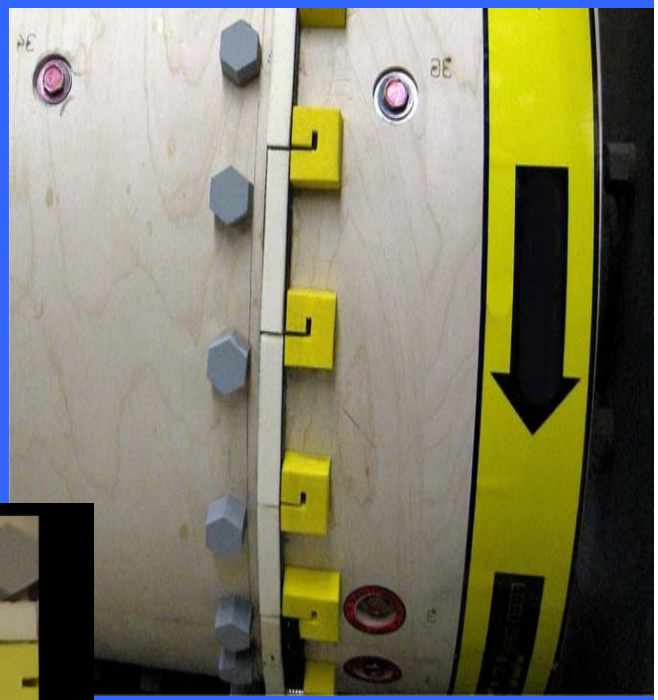






Innovation Application

- Sides Only
- Lead Edge and Trail Edge Only
- All Four (4) Sides



Innovation Application

Product Application – 66” Dies			
	Single Wall		Double Wall
Feed Direction	< 275# Test	= / > 275# Test	
With Corrugation	Qualified	Qualified	Qualified
Across Corrugation	Qualified	Qualified	Qualified

Tested with Success on 37.5” Diecutters

Innovation Application

Existing Dies Can be Retrofitted

Innovation Has Performed Well:

- Warped Board
- Bundle Breaker Dies
- Double Kicking
- Hot Board / Wet Board
- Double Wall
- Across Corrugation

Press Run Observations

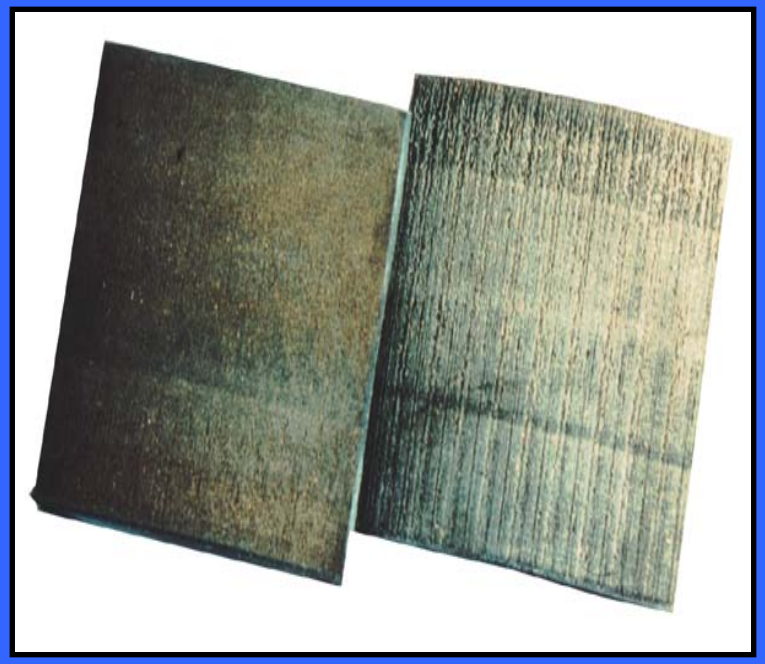
Managing Scrap

Seems to further improve as the press speed increases from conventional die run speeds

Press Run Observations

Managing Scrap

There is no substitute for good anvil cover maintenance (i.e. rotation, trimming)



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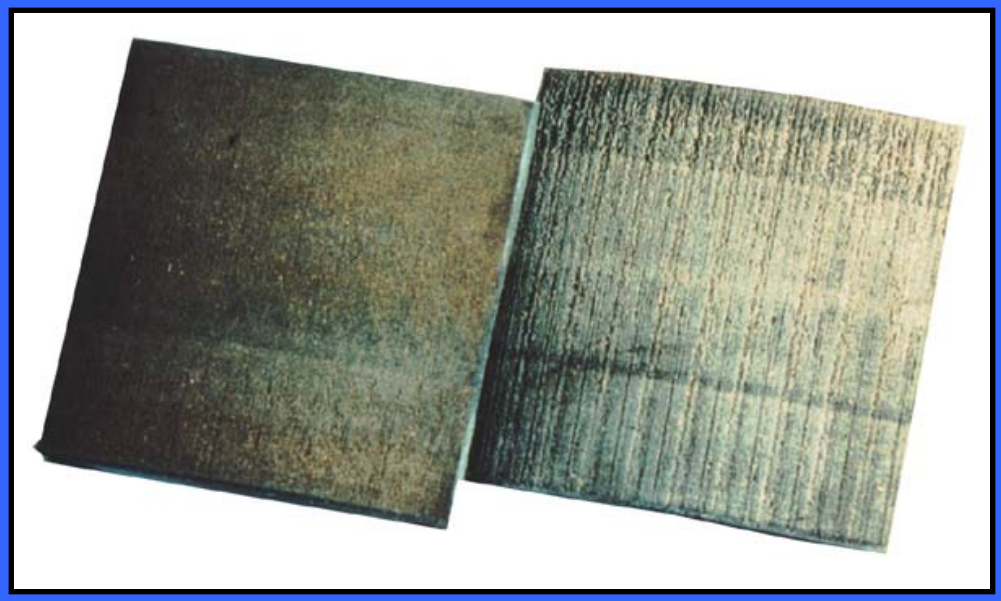

However, when anvil blankets are not level, the Innovation's urethane foam seems to seat with the anvil blankets as the press run progresses and the product's performance improves with the run.

Press Run Observations

Managing Scrap

The Innovation better manages trim scrap and prevents other die scrap from mingling in with the product load.

Press Run Observations

Managing Scrap

The Innovation better manages trim scrap and prevents other die scrap from mingling in with the product load.

A Theory

When trim scrap is not properly managed; upon exiting the diecutter, uncontrolled trim can fly into and disrupt the path of other scrap that was otherwise being managed by the die. By controlling the trim, other scrap is also better controlled with this Innovation

Press Run Observations

If Equipment Registration Limitations do not permit running with reduced trim, the Converter can still take advantage of all the other benefits

- Runs Faster
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- Reduced Impression
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- Sustainability

Press Run Comments

""Never ran that good before!"

- GM-

"the shaker straps
are reading zero,
It really has ZERO!!!"
-GM-

"the die did
EVERYTHING
the vendor said it would!
• ran at top speed
• ran with zero scrap
• ran with 1/8" trim!"
- Operator

"one of the best
innovations to hit
the market in
a long time"
Management

"It was EXCELLENT!
More than I ever hoped for!"
- Plant Superintendent

"This is exactly
what we have been
looking for!"
- Converting Superintendent

""Come look at this,
the other die wouldn't even cut it!"
- Operator

""I want it on all my new dies!"

- Owner -

A Rotary Die and Diecutting Innovation

Container Graphics' MicroTrim ™

Patent Pending in USA, Canada, Mexico, Ireland, and the UK

A Rotary Die and Diecutting Innovation

MicroTrim ™

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CGC Container Graphics Corporation

Patent Pending USA and Canada

Boxer Seal of Approval

The End

Patent Pending in USA, Canada, Mexico, Ireland, and the UK