EST. 1926

SAUER SYSTEM

SATURN UPGRADES

TAKE THE NEXT STEP TO BLAST YOUR MACHINE INTO ORBIT

Saturn Upgrades

Langston Saturn flexo folder-gluers are some of the most iconic machines in the corrugated industry.

Although last manufactured by Langston in 2000, most Saturns are still in operation and remain highly valued in the used machinery market. Saturns are reliable workhorses, producing boxes at high speeds day in and day out. Because the machines were engineered using sound mechanical principles, they are easy to maintain, and parts and support remain readily available.

Sauer System has been involved with Saturn flexos from the very beginning, supplying the male and female creasing rings directly to Langston. In 2016, using our extensive knowledge of these machines, we embarked on a program to offer a complete portfolio of value-added mechanical upgrades specific to Saturns. These upgrades extend from the slotting section to the counter-ejector. Every upgrade offers enhanced value over the OEM component, is competitively priced and reflects the quality you have come to expect from Sauer System.

THE GOALS

The goals of the upgrades are to increase productivity, improve box quality, reduce costs in both the short and long term, and dramatically reduce maintenance downtime. Across the board, the upgrades offer a tremendous value. Throughout this guide, return-on-investment considerations will be listed by the upgrade. We are excited that you have your hands on this guide. If you are ready to take your Saturn to the next level, we are prepared to help. Take the next step to blast your machine into orbit!

Let's start the countdown!

Peter Sauer
Vice President of Sales

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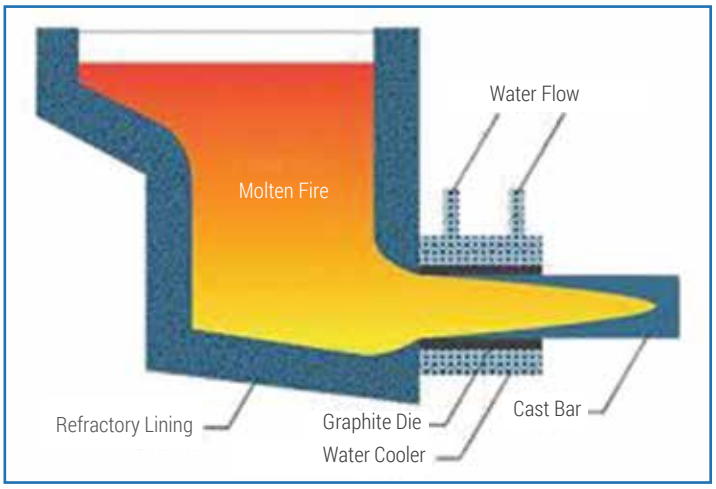
Slotting Section Upgrades

HEADS & HEAD ASSEMBLIES

Sauer System offers a complete line of slotter heads, glue tab heads and creaser heads for all Saturns. Heads can be purchased as base heads only or as complete assemblies with wear plates, slotting blades, and creasing rings installed.

Every head is manufactured to Sauer System manufacturing specifications, which meet or exceed OEM tolerances, from Dura-Bar® Continuous Cast Iron Bar Stock. This defect-free material offers superior characteristics that help reduce maintenance issues such as shaft galling.



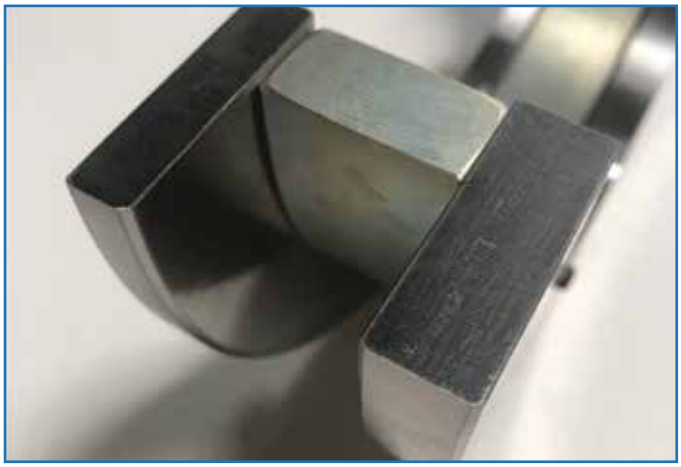
All Sauer System upper slotter and glue tab heads come with a choice of full English index stamping, full metric index stamping, or a “zero position” scribe line.

Yoked upper heads also feature a replaceable steel keyway insert. If the keyways begin to wear out over time causing registration issues, the keyway inserts can be easily replaced.

Finally, all yoked heads, both slotter heads and creasing heads, feature emergency set screw holes in case the yoking mechanism fails.

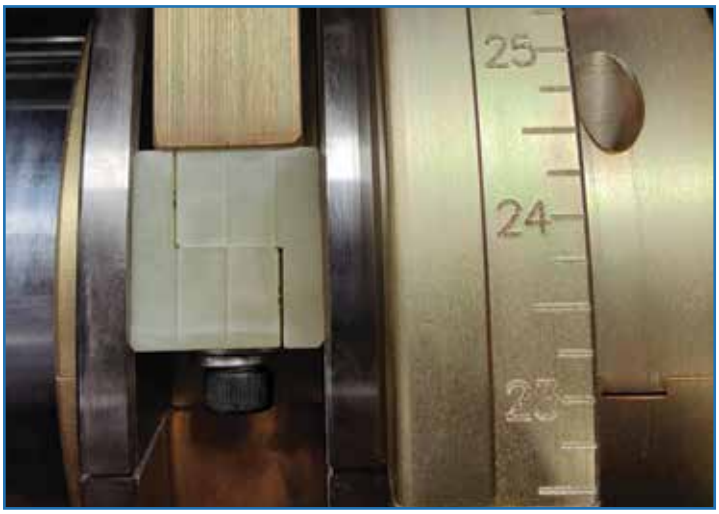
SAFETY WEAR PLATES

In addition to heads, Sauer System offers yoke wear plate upgrades, which are highly recommended when replacing yokes or ordering new heads. The Sauer wear plate design offers several important advantages over the original OEM design:



The Sauer System three-ring design consists of an inner wear plate, an outer wear plate, and yoke spacer. When the wear plates become worn, they can be flipped around, or replaced individually. Conversely, the OEM design is a one-piece “U-shape” that cannot be flipped and is expensive to replace.

Sauer wear plates feature a significant safety feature: chamfered edges that eliminate unnecessary sharp edges. This safety feature prevents accidental injuries from occurring when installing, replacing, and working with the wear plates and heads.



All wear plates are made from high-quality tool steel and are hardened in house to 58-60 Rockwell.

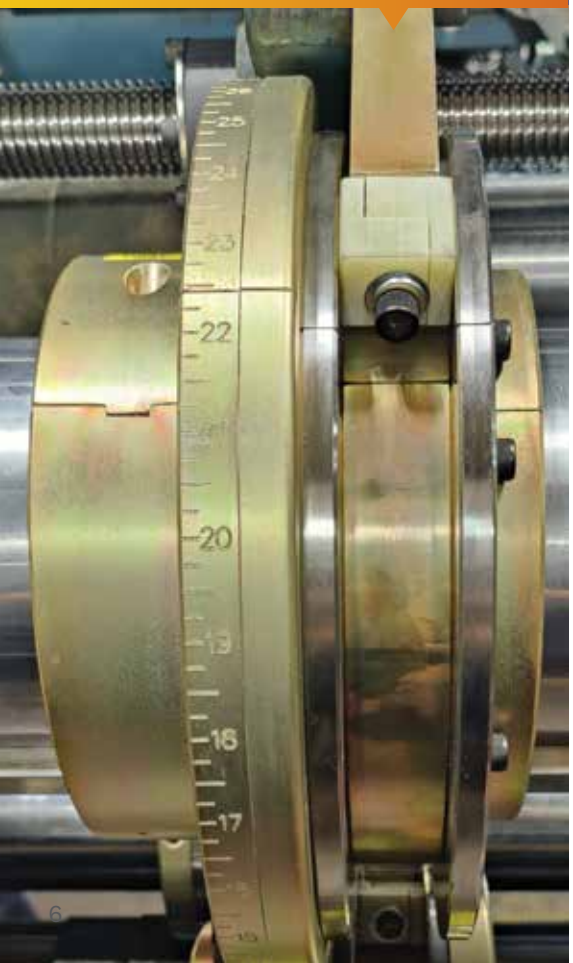
WEAR PLATE UPGRADE BENEFITS

- Modular design
- Wear plates can be flipped for two uses
- Chamfered edges promote safety
- Superior materials and proper hardening promotes long life

UPGRADE BENEFITS

- Dramatically reduced maintenance downtime
- Longer life of male and female slotting knives
- Improved folding and box squareness
- Higher quality slots
- Immediate and long-term cost savings
- Quieter machine operation
- Simplicity of design and function

Yoke block properly adjusted.



Slotting Section Upgrades

SLOTTER & CREASER YOKES

The Sauer System yoke system upgrades consist of spring-loaded composite yoke wear blocks that allow for quick and accurate adjustments. The wear blocks are held closed with an end bolt. When the composite block pieces wear down, loosening the end bolt allows the pieces to spring out and compensate for wear. Re-tightening the bolt holds the adjusted block in place. This yoking system replaces the OEM style yokes that utilize carbide buttons. The adjustment of these buttons is a time-consuming challenge for even the most skilled maintenance crew. Over time, paper dust and debris buildup can make any adjustment next to impossible.

The upgraded yokes utilize a spring-loaded composite block mechanism that allows for quick and accurate adjustments. The cut-away diagram shows the internal springs. The wear blocks are held closed with an end bolt. When the composite block pieces wear down, loosening the end bolt allows the pieces to spring out and compensate for wear. Re-tightening the bolt holds the adjusted block pieces in place.

One particularly important component of the yoke upgrade is quick-adjust creaser yokes. The Sauer design creaser yokes are an especially effective application because the small diameter Saturn creasing heads tend to wear out the yokes and yoke plates faster than the slotter heads. Creasing heads with play will walk along the shaft, creating score lines that are off-center, contributing to folding issues. Sauer creaser yokes allow for adjustments in under a minute per yoke.

RETURN ON INVESTMENT CONSIDERATIONS

PRODUCTIVITY

- Less operator intervention to move heads to the exact right position. **Up to 30 minutes per 8 hours.**
- Faster run speeds due to increased box squareness. **Up to 25% faster.**

QUALITY

- **Square boxes** – the yokes prevent the male creasers from walking on the shaft, creating off-center score lines.
- **Cleaner slotting** – the yokes keep the male and female slotter heads aligned.

COST SAVINGS

- Male and female slotting knives will last far longer than before because the slotter heads stay aligned. **Annual savings up to $15,000.**
- Composite yoke wear blocks will outlast carbide buttons by over a year. **Annual savings up to $3,000**.
- Wear plates typically no longer need to be replaced **Annual savings up to $10,000.**

UPTIME

- Adjusting the yoke blocks takes no more than 45 minutes for all heads. Setting the carbide buttons typically takes up to 8 hours. **Saves up to 32 hours per year.**
- Less slotting knife changeouts. **Saves up to 12 hours per year**.

UPGRADE BENEFITS

- Eliminates issues with hold-down rollers
- Reduces maintenance requirements
- Improves belt tracking
- Improves board transfer
- Provides a uniform and smooth surface for the belts to ride on, and a continuous nip
- No maintenance or adjustments required
- Replaces rollers with ultra-durable, spring-loaded boxes
- Eliminates potential twisting and tracking issues

Folding Section Upgrades

HOLD DOWN ROLLER ELIMINATOR

Before Roller Eliminator

The Hold Down Roller Eliminator upgrade consists of heavy-duty, ultra-durable, spring-loaded rails that provide a uniform and smooth riding surface for the belts, and a continuous nip. The eliminator automatically adjusts for board caliper and no adjustments are ever required. In addition, there is limited maintenance required to maintain the integrity of the system. These features eliminate all the maintenance issues associated with the adjustable, spring-tensioned, hold down rollers that were supplied by the OEM. These issues include worn out bearings, improperly adjusted springs and missing rollers. The Hold Down Roller Eliminator also reduces the noise associated with the rollers.

After Roller Eliminator

RETURN ON INVESTMENT CONSIDERATIONS

PRODUCTIVITY

- No operator intervention adjusting or manipulating hold-down rollers. **Up to 30 minutes per 8 hours.**
- Faster run speeds due to increased box squareness and reduced belt twisting. **Up to 25% faster.**

QUALITY

- **Square boxes** – provides a continuous nip, improves belt tracking, reduces belt twisting, and eliminates issues with operator and drive side belts running at different speeds.
- **Improved gap variation consistency** - reduced plowing, toeing, skewing, and fishtail.

COST SAVINGS

- Zero maintenance cost. No need to replace rollers, bearings, bushings, etc. **Annual savings up to $10,000.**
- Compatible with standard rough-top belts. No need to purchase expensive offset suction cup vacuum belts. **Two-year savings up to $10,000**.

UPTIME

- Limited maintenance required. **Saves up to 60 hours per year.**
- Fewer jam-ups due to improved belt tracking. **Up to 30 minutes per jam**.

UPGRADE BENEFITS

- Add-on system (interacts with existing folding belts)
- Improved control of sheets running through the folding section
- Easy and repeatable tool-free adjustments
- Specifically engineered for Saturn flexo folder-gluers
- Helps reduce folding belt “snapping” motion
- Reduces skew, fishtail, and plowing
- Quickest possible solution for going from inside glue to outside glue
- Utilizes UHMW rod and aircraft grade aluminum folding arms

Folding Section Upgrades

FRX ADJUSTABLE FOLDING ROD SYSTEM

▲ C-shaped arms near the counter ejector

Saturn Upgrades by Sauer System

Sauer System has developed a variation of its FRX adjustable folding rod system specifically designed for Saturns. The folding rod system begins after the glue head but becomes particularly effective in the area where the box flaps fold past 90 degrees. The last three folding arms positions are mounted to the Saturn's adjusting bars and feature "C-shaped" arms that both integrate with and support the assist belts. The folding rods assure a smooth transition of the box flaps and reduce or eliminate the snapping motion from the belts. The result is improved box squareness.

Integration with assist belts ▸

RETURN ON INVESTMENT CONSIDERATIONS

PRODUCTIVITY

- Reduced setup time going from inside to outside glue. Reduced setup time for challenging panel sizes. **Up to 30 minutes per 8 hours.**
- Faster run speeds due to increased box squareness. **Up to 15% faster.**

QUALITY

- **Square boxes** – better control of flaps throughout the fold reduces issues with plowing, toeing, skewing, fishtail, and gap variation inconsistency.
- Internal locking and the elimination of catch points reduces potential marking and scuffing issues.

COST SAVINGS

- Less wear on lower assist folding belts, meaning less frequent replacement of belts. **Annual savings = $2,000.**
- In some cases, complete removal of lower folding belts altogether. **Five-year savings up to $10,000**.

UPTIME

- Reduced jam-ups in the folding section due to better control of flaps. **Up to 30 minutes per jam.**
- Reduced jam-ups in the counter-ejector due to boxes being delivered flat. **Up to 30 minutes per jam**.

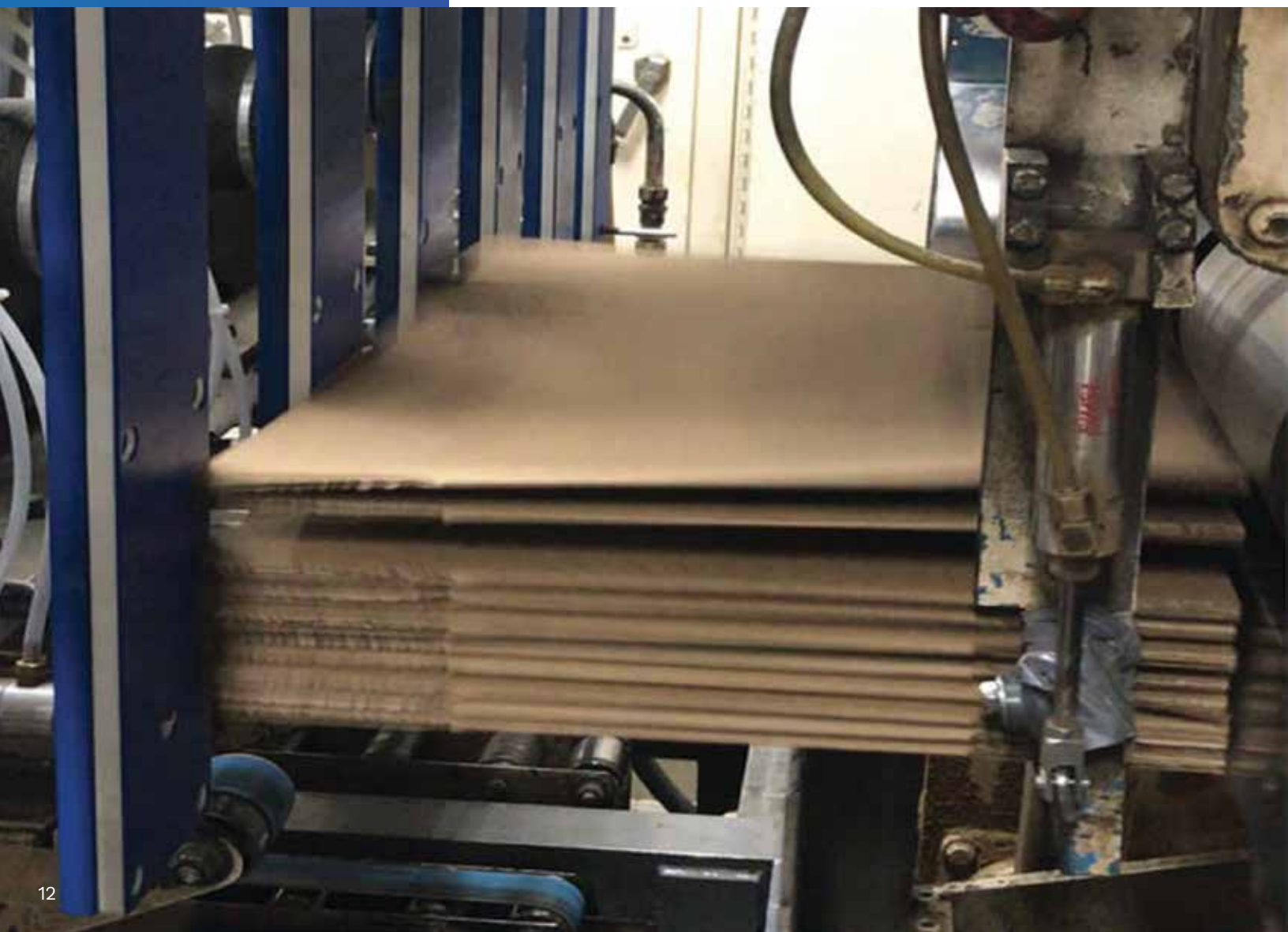
UPGRADE BENEFITS

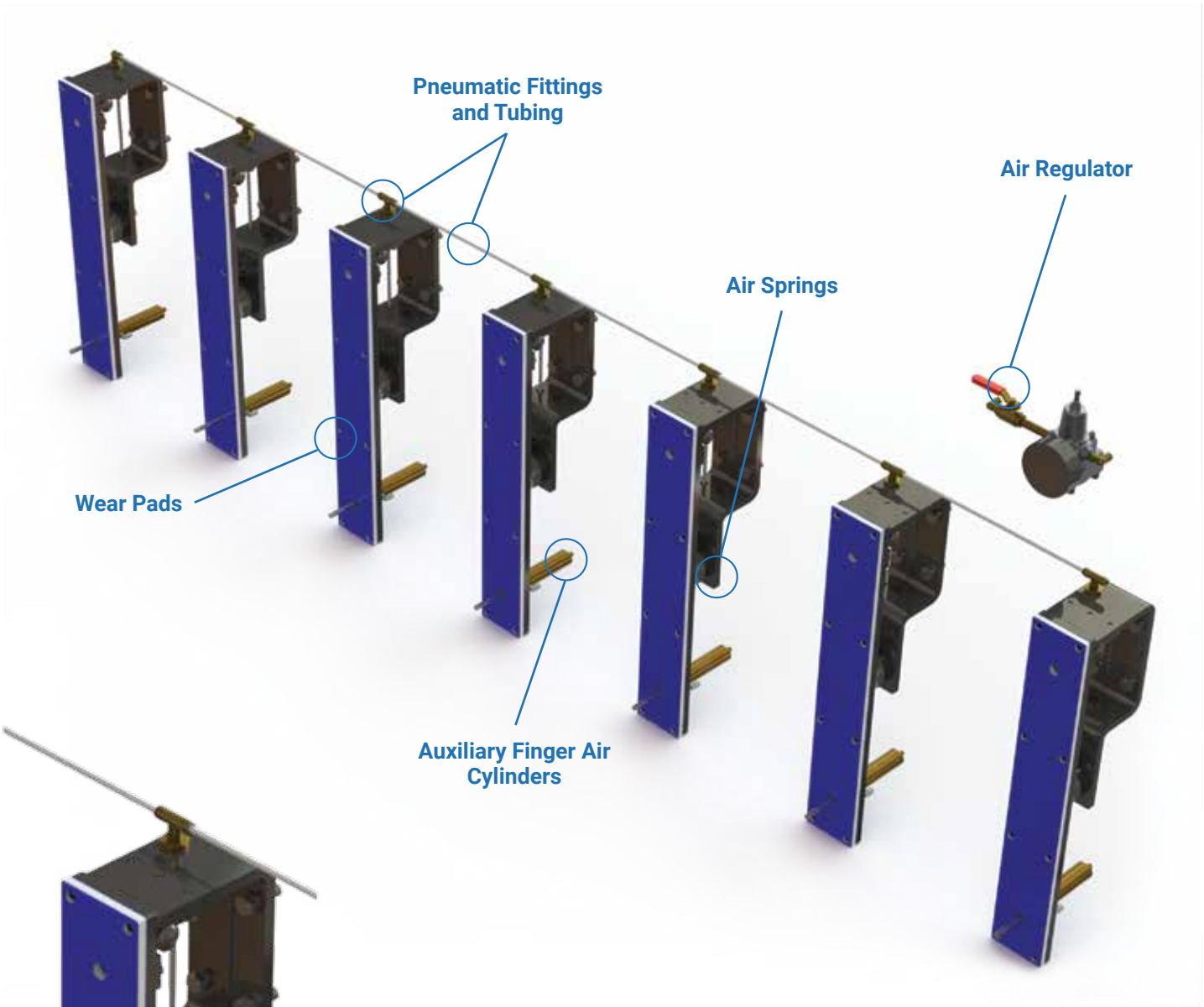
- Air-spring mechanism prevents damage to incoming sheets
- Backstops have composite wear pads on the front to help absorb the impact
- In the event of a jam-up, the air can be turned off, allowing relief to clear the jam

Counter-Ejector Upgrades

AIR-SPRING BACKSTOPS

The air spring backstop upgrade consists of seven individual backstops with soft, impact-resistant, replaceable wear pads individually hinged to cushioning air springs. These air springs allow the backstops to flex upon impact. The air pressure can be adjusted, depending upon product mix and machine speed, and is easily relieved to clear jam ups, should they occur. OEM backstops are rigid steel weldments that, if not properly adjusted, can damage the lead edge of sheets, are subject to wear and tear from the impact of sheets, and offer no forgiveness in the event of a jam up.





The backstop upgrade consists of:

- (7) Pneumatic air-spring backstops with wear pads (installed)
- (7) Auxiliary finger air cylinders (installed)
- (1) Air regulator
- All required pneumatic fittings and tubing

Counter-Ejector Upgrades

TROMBONES

The counter-ejector upgrade replaces the OEM aluminum trombones with fiberglass reinforced trombones. While aluminum is prone to bending, the fiberglass reinforced unit is virtually indestructible. UHMW guide blocks ensure the trombones are directed straight forward. The result is fewer jam ups and greater repeatability within the counter-ejector.

- Virtually indestructible
- Utilizes fiberglass for reinforcement
- Utilizes UHMW guide blocks
- In stock for immediate shipment

Trombones installed

SHOCK ELIMINATOR UPGRADE

- Reduces impact during the cycling process
- Dramatically reduces noise
- Installs in 15 minutes
- Features an inexpensive replaceable bumper

Shock eliminator installed

VALVE UPGRADE

- Larger ports allow for more consistent air flow
- Counter-ejector timing will instantly become more consistent, reliable, and repeatable
- The end result is fewer jam-ups in the counter-ejector

Valve stack before

Valve stack upgrade installed

RETURN ON INVESTMENT CONSIDERATIONS

PRODUCTIVITY

- Faster run speeds due to improved air flow to counter-ejector valves and more accurate movement of trombones. **Up to 30% faster.**
- Faster run speeds due to increased box squareness. **Up to 15% faster.**

COST SAVINGS

- No need to replace backstops. **Annual savings up to $3,000.**
- No need to replace trombones. **Annual savings up to $3,000.**
- Less integral damage to counter-ejector elevator and other structural components. **Five-year savings up to $10,000.**

QUALITY

- Less damage to the lead edge of incoming sheets due to the dual cushioning features of the air-spring backstops.

UPTIME

- Less jam-ups in the counter-ejector due to repeatability of moving components. **Up to an hour per shift depending on the condition of the counter-ejector.**
- Air-spring backstops allow jam-ups to be cleared quicker by providing relief between the backstops and spanker. **Up to 30 minutes per jam-up**.

SATURN UPGRADES

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