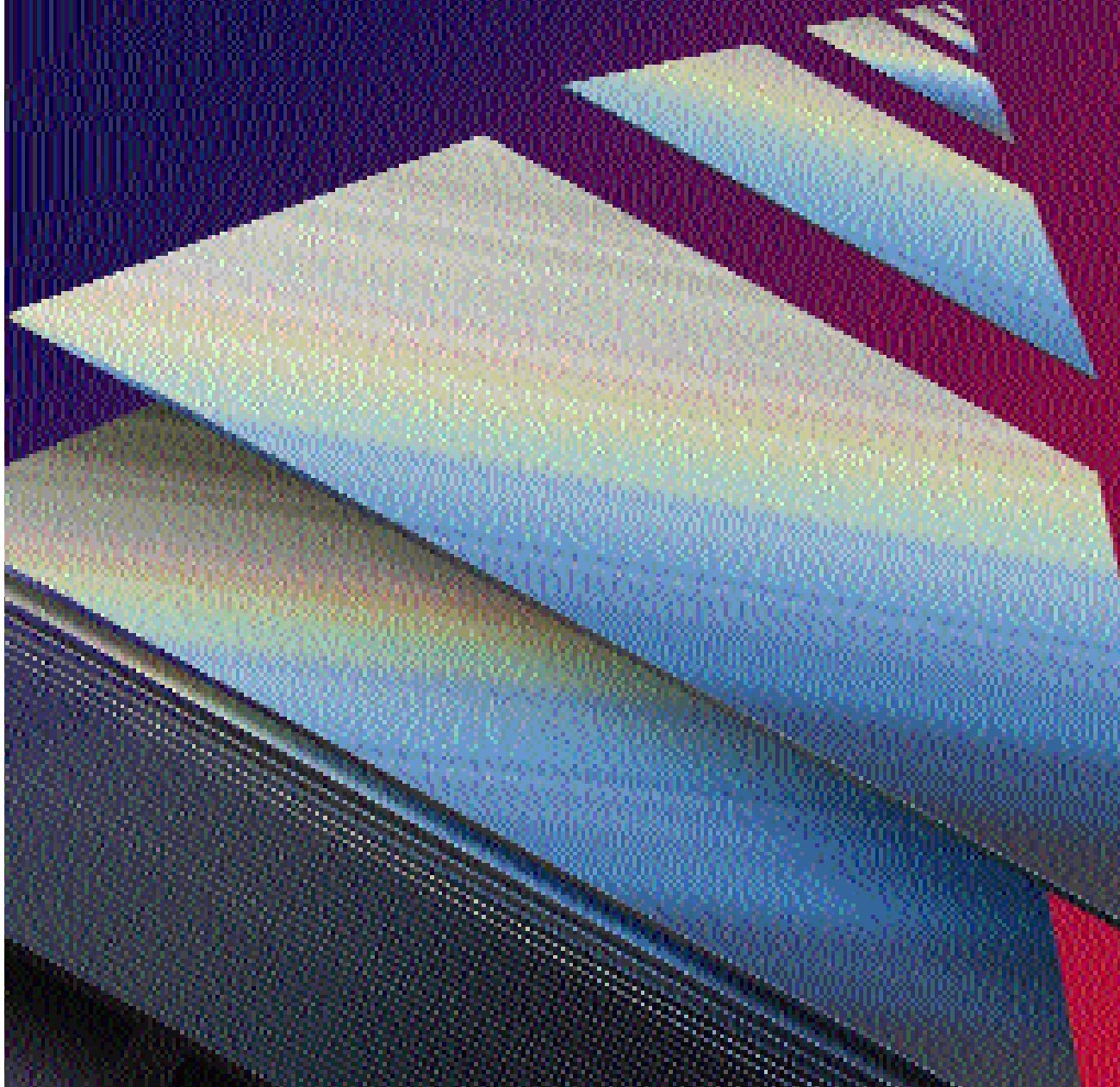


Automated Sheet Metal Handling



Atlas is the metalforming industry leader in designing and building:

Die Change Systems; Die Storage and Retrieval Systems

including complete die cart/rack systems for individual or tandem line presses

Programmable Tri-Axis In-Press Transfers

including the patented FLEX 5000®

Stacking and Destacking Automation

for sheet metal blanks or parts

Atlas provides a unique level of in-house engineering experience, proven products, an extensive supplier network, and comprehensive training and support services... all specifically focused on solving your complex pressroom problems, worldwide.

We have complete in-house capability for total system responsibility, mechanical and controls design, fabrication, machining, assembly, test and installation.



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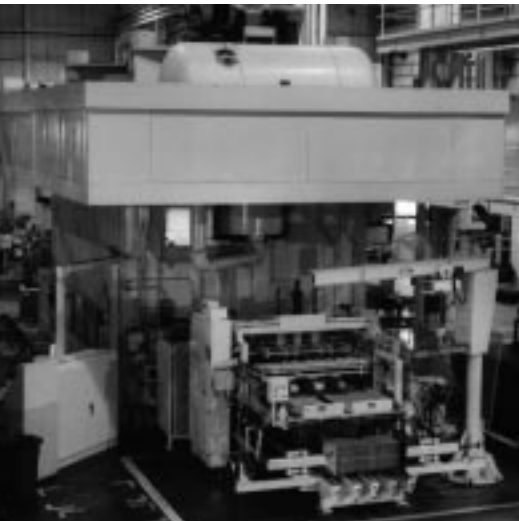
Sheet Metal Handling: The Objectives

- **Maximize press uptime** by maintaining a constant flow of material to and from the presses
- **Maximize press speed**
- **Improve ergonomics**
- **Achieve consistent surface finish quality** by keeping blanks free of contaminants that can effect surface finish
- **Protect quality of finished parts** after forming.

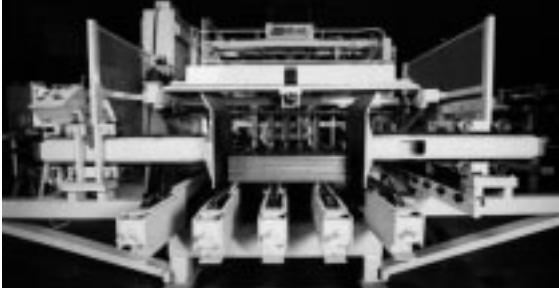
Atlas: The Pressroom Automation Specialist

At Atlas, our entire business is centered around the goal of optimizing the movement of sheet metal and dies during stamping processes – in short, solving your pressroom production problems and taking advantage of automation opportunities. We've been doing it for over 30 years, and we've designed and built destackers, stackers, die cart and die storage/retrieval systems, programmable in-press transfer systems and other pressroom automation for hundreds of tandem press lines and single press applications.

Our extensive experience with presses and dies ensures that your tooling and equipment is fully compatible with your automation. Atlas is a full-service resource that provides objective engineering studies and simulations to evaluate your present and future needs, examine alternatives, and find the most productive mixture of manual and automated operations.



Atlas destacker, with in-line cranesaver, feeds a transfer press in a continuous-run, high-volume automotive stamping application.



Atlas destackers ensure that a constant flow of blanks will be fed to the press.



Automated Destacking Systems and Strategies

The Benefits

Automated destacking improves the performance of stamping presses, including transfer presses and tandem press lines. It reduces labor costs and allows you to increase production with existing presses, ensuring that a constant flow of blanks will be fed to the press. It also keeps blanks free of contaminants that can blemish product finishes.

Atlas destackers are used extensively in the automotive, appliance, HVAC equipment, lawn and garden and other industries, to increase both press uptime and production output. Production rates range from 200 parts per hour to 1500 parts per hour, with maximum speeds achieved when magnetic belts and lift tables are utilized.

Continuous “No Interruption” Destacking

Atlas destackers can provide continuous destacking with no interruption of the press stroke between stacks. As a stack of blanks gets close to depletion, the remaining blanks are supported by carriage-mounted forks that allow the lift table to reposition and queue the next stack underneath the destack head, which is then ready for immediate destacking when the outgoing stack is depleted.

Disengageable Fanner Magnets

Atlas has designed a destacker fanner magnet unit (patent pending) that utilizes a simple fixed magnet yet allows the magnetic field to be broken if you need to pull the fanner unit away from a stack. This gives you easy access to a partial stack of blanks during production.



“NO INTERRUPTION” DESTACKING: As a stack of blanks gets close to depletion, carriage-mounted forks move in to support the remaining blanks. The lift table lowers, and another stack is moved onto the lift table and queued under the destack head. When the last of the previous stack is destacked, the forks retract and the vacuum cups descend on the next cycle to destack the first blank of the full stack.

3-station 90° cranesaver on destacker for high-volume tandem press line.

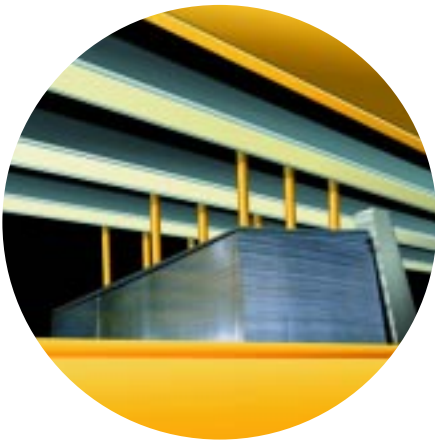


The Destack Sequence

During operation, an individual blank is separated by fanner magnets, picked up by overhead vacuum cups, and raised to a magnetic belt conveyor. Magnetic rollers are used in some applications, and systems can be configured for non-magnetic sheets as well. The vacuum cups release their grasp and retract above the belts (or rollers). Each blank is then conveyed through a rollcoater or washer, if required, and positioned in a gage station, ready to be picked up by first-press

Programmable Gage Station Adjustments

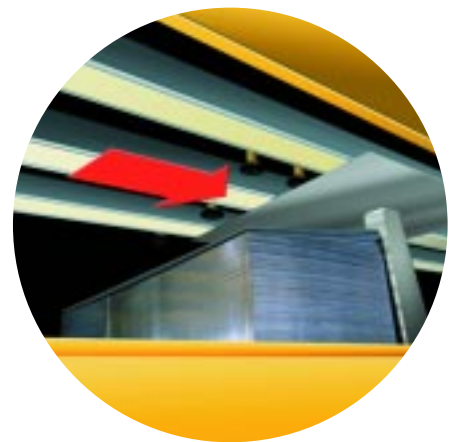
Manual or fully programmable gage stations, with automatic 2-axis adjustment of the crowdors, are available. This optional feature allows changeover in seconds between blank sizes, blank position, or even between single and double-unattached modes. It also assures consistent, tight-tolerance positioning for accurate press loading.



An individual blank is separated by fanner magnets and picked up by overhead vacuum cups.



The blank is raised to, and held by, a magnetic belt conveyor. The vacuum cups retract above the belts.



The blank is then conveyed forward to a gage station for press loading.

pick-and-place load automation or transfer press automation. Lift tables are utilized to maintain blanks at a consistent height as the stack is depleted to reduce destack head travel.

No Transfer Press Loader Required

In most transfer press applications, the Atlas gage station configuration eliminates the need for a press loader, since the destacker is designed to interface with the transfer press



Atlas' new light-weight aluminum adjustable destack head allows near-infinite positioning of vacuum cups, including individual cup adjustment; new design ensures long component life.



automation for pickup from the gage station by the transfer fingers or crossbar vacuum cups.

Robotic Destacker

In applications with slower press speeds, a traversing head or robotic destacker provides a cost-efficient alternative. A destack head or end-of-arm tool is utilized to grab a blank, raise it, and traverse it to a gage station or directly place it into the die from the stack.

Integrated Rollcoaters & Washers

Integrated rollcoaters or washers automatically ensure required blank preparation. Units feature a closed-loop fluid system, and the ability to adjust film thickness on both sides of the blank as well as the degree of cleanliness you require.

Cranesavers Queue Stacks of Blanks

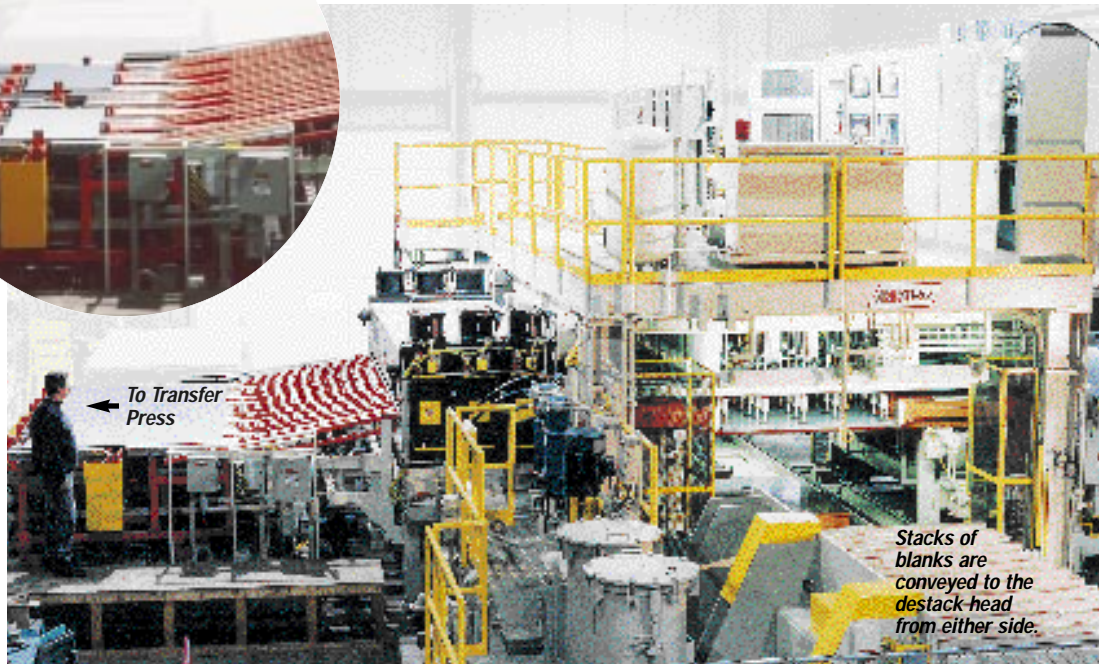
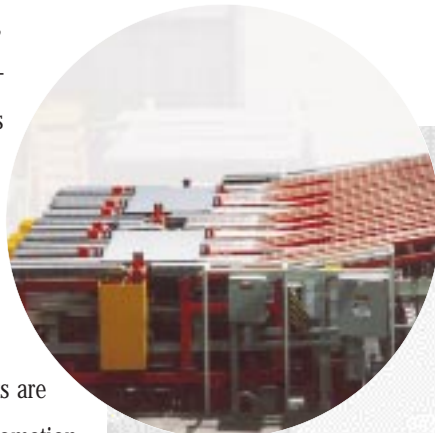
Atlas cranesaver conveyors or carts are integrated with the destacking automation to queue stacks of blanks, quickly move them into position for destacking, and move empty pallets or dunnage out after depletion. Blanks can also be placed directly on the conveyor or cart in some applications.

Three to five stations can be provided in L-shaped, in-line, rotary or right angle (single or bi-directional) cranesaver configurations.

A U-shaped configuration provides maximum pallet queuing in limited floor space.

Complete Stamping Cell or Press Line Integration

Atlas provides pressroom systems integration services, and can provide complete automated stamping cells and tandem press lines, including die change systems, in-press transfer automation and die coordination.



Large destacker for crossbar transfer press, with integrated washer. Programmable gage station allows fast changeover between double-unattached blanks and various-sized body panels up to 80" x 160". Atlas-designed software includes diagnostics and teach mode. Vacuum cups are easily accessed for adjustment from balcony.

Automated stamping cell includes (left to right) Atlas die cart, FLEX 5000® tri-axis transfer, and destacker.

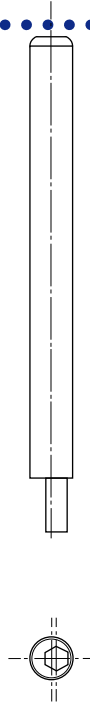


Other Stack Handling Innovations

Flexible Pin Pallets Assure Accurate Blank Location

Atlas Flexible Precision Pin Pallets assure that blanks of any size or shape are accurately positioned for destacking. The positioning pins in the pallet are quickly and easily adjusted for an almost limitless variety of blank patterns, shapes or sizes.

The pins are oriented on an eccentric hexagonal shaft. By rotating these hexshafts within the appropriate holes in the pallet, snug pin alignment of the blank and precise blank positioning are achieved.

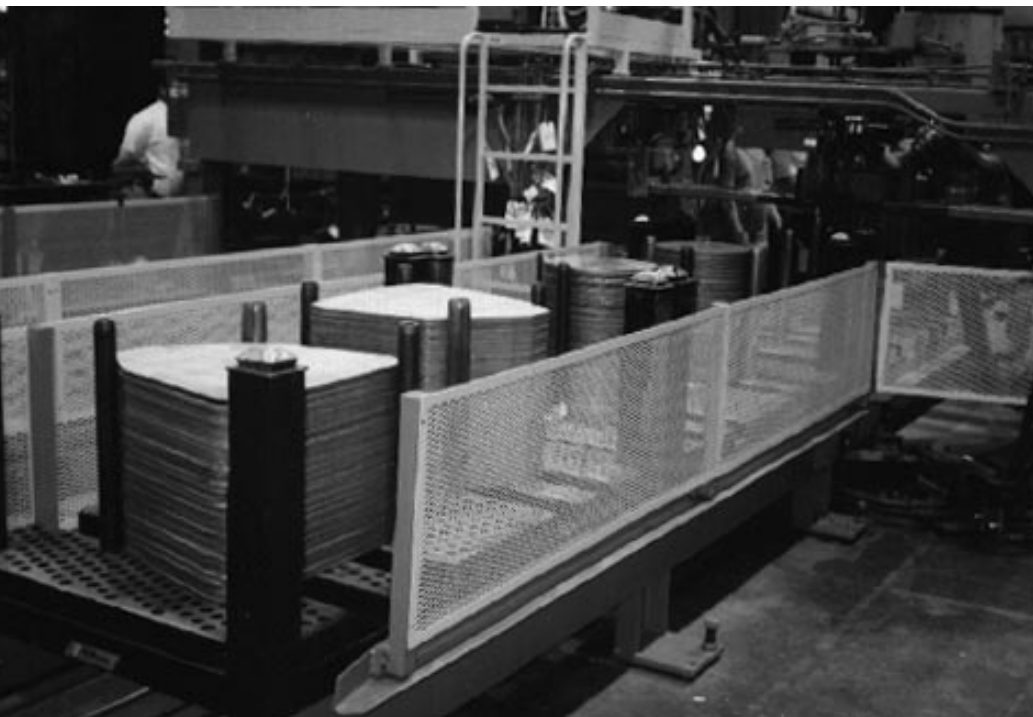


Atlas Bundle Turnovers Protect Quality, Simplify Tooling and Operations

Atlas Bundle Turn-Over's automate the process of reorienting sheet metal blanks, eliminating the use of cranes for this cumbersome task and reducing the risk of damaging blank quality. Atlas applications have simplified tooling requirements for right-hand/left-hand processing, and allowed easy reorientation in situations involving inversion of edge burrs, and blanks that are coated on one side only.

The C-frame design is for fork truck or AGV loading; a Barrel-type design can be loaded by an overhead crane.

Medium-weight barrel-style Bundle Turn-Over.



Flexible pin pallets accurately position any size or shape blank. Cranesaver conveyor queues pallets for destacking.



Stacker lift table with stack discharge conveyor.



Automated Blank Stacking

How It Works

Atlas automated blank stacking systems reduce manual handling, improve surface finish quality, and increase production efficiency of cut-to-length operations and stacking of sheet metal blanks as they exit a blanking press or trapezoid shear.

The stackers can handle rectangular, trapezoid, patterned or irregular shapes, and are designed for use by the automotive, appliance, contract stamping and other metalforming industries. Quality improvement benefits can be achieved when the stackers are used for handling exposed metal or prepainted steel, since features of the stackers help to prevent marring of surface finish.

A typical stacker system includes:

- a run-out conveyor that moves the part away from the coil material being fed for the next stroke
- a magnetic belt or roller conveyor to position the part for stacking
- an adjustable stacking box.

Many stackers also include:

- a lift table that adjusts the height of the stack as the blanks accumulate, to achieve a constant drop distance and a more even stack. It also lowers the stack for clearance so it can be conveyed or transported away.

- an exit conveyor or cart that moves the full stacks out and empty pallets into the system.

Atlas stacking systems can be supplied in either single or double-station configurations, and can be used for “side stacker” operations. Double-station systems allow continuous stacking by alternating the two stations; there is no interruption while stacks are removed.



Double-station blank stacker alternates between the two stations, allowing continuous blanking and stacking, with no interruptions for stack removal. Full pallets move to either side of the stacker via conveyor. A reject station is at end of stacker (at left).

They are also used for oscillating shear trapezoid applications. Atlas systems provide excellent stack quality, with uniform edges and straightness, and can usually accommodate existing pallets or dunnage, although none are necessary in many applications.