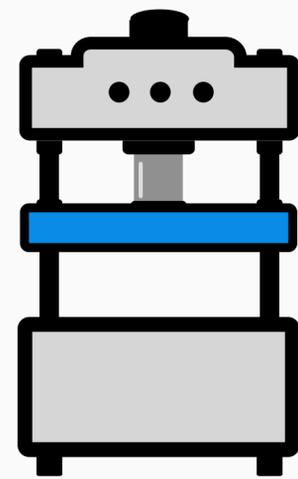


# HOW MAINSTAY MANUFACTURING EQUIPMENT MADE ITS WAY INTO THE MEDICAL LAB



Machine presses are commonplace in nearly every niche of manufacturing. Techniques associated with presses are wide-ranging and vary almost as much as their applications. But they all share one thing in common: presses enable the manufacturing of components via the application of pressure. In processes such as laminating, molding and extrusion, presses can be put to use to form a range of materials, primarily rubber and plastics. Ubiquitous in the manufacturing of aerospace and automotive components, a press would be out of place in a medical laboratory, right? The match may not seem like one made in heaven but in recent years, presses have made their way into medical labs, where they provide an effective way to produce cellular scaffolds on which to grow tissues to transplantation. Let's take a quick look at this new application area, as well as two tried-and-true industries in which presses have been instrumental over the years.

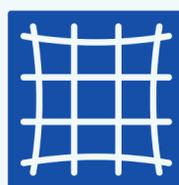
## MEDICAL

Bone tissue engineering is a complex process that necessitates the optimization of physical and chemical characteristics, while achieving a balance between biodegradability and mechanical strength.



The ultimate goal is to develop a tissue scaffold that uses biocompatible materials to not only produce an effective functional replacement for damaged bone tissue, but also initiate and support natural bone regeneration. In their quest to fabricate the perfect matrix, researchers have recently turned to hydraulic presses for help.

Hungarian researchers recently fabricated a composite, fibrous mesh comprising both degradable and non-degradable elements. Since they planned to use the mesh in *in vitro* cell studies and *in vivo* animal experiments, they needed to reinforce the and enhance the mechanical characteristics of the mesh to ensure stability. After folding and compression with a hydraulic press, the meshes presented compact and rigid—well-suited for future experiments.



## AEROSPACE

New composite parts are helping aerospace manufacturers reduce weight and increase fuel efficiency. Increasingly, manufacturers are turning to hydraulic presses to complete the compression molding involved in the manufacture of these parts. Compression molding provides numerous advantages, including the fact that it is the least expensive molding process. The technique can be used to produce relatively large and fairly sophisticated components, including:



Plastics



Composites or Composite Material



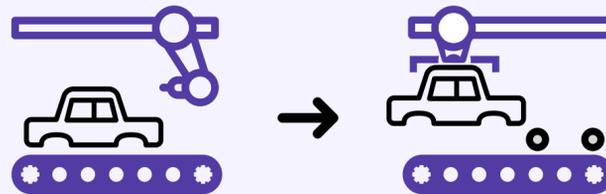
and Metals.

Compression molding also finds common usage in the production of moderately curved or flat components. In recent years, hydraulic press technology has seen significant improvements in seals, pumps, hoses and couplings—virtually eliminating leaks and minimizing press maintenance. Additional benefits include: time efficiency during setup and changeovers, flexibility for a wide range of applications, lower operating costs, greater control and a smaller footprint.



## AUTOMOTIVE

The versatility of pneumatic and manual presses makes them ubiquitous workhorses in any automotive facility. Presses can assemble, disassemble and reassemble automotive parts, while ensuring the integrity of both the parts and the job. From assembling specific parts, such as electrical connectors and fasteners, to inserting ball bearings or bushings and installing highly precise components like speedometer needles, presses can easily and quickly handle a variety of jobs. When searching for the perfect press for your automotive facility, be sure to consider the force requirements and production volume of your toughest job. Additionally, the integration of pneumatic components into manufacturing robots means presses are well-suited for both manual and automatic workflows.



Laboratory press manufacturers, such as Carver, Inc., boast a myriad of instrument solutions to fit a variety of industries, applications, sizes, options and features. With industries increasingly turning to presses, custom-made presses and accessories have become a popular option to ensure exact specifications.

