# Autoclave Systems

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## Full-Scale Bonding Autoclave Systems

McGill AirPressure has been an industry leader in the development and manufacture of large bonding autoclave systems. We have provided bonding autoclave systems, some up to 26 feet in diameter, to most of the world's major aerospace and automotive manufacturers.

In a typical bonding process, the materials to be bonded are placed in a mold, and a vacuum is drawn to remove the air between layers of material. This vacuum is maintained after the materials and mold are placed inside the autoclave. Once the autoclave has been sealed, heat and pressure are applied to bond materials into one integral part. Temperature and pressure are maintained for a predetermined period (soak period) to affect a good bond. Finally, the newly formed composite is cooled.

McGill AirPressure supplies autoclave systems for bonding composites such as polyamides, polymides, graphite-epoxy combinations, and many others. Composite products include: aerospace — helicopter blades, airframe parts, body skins, and wing components; and automotive — chassis parts, body panels, and seats.

Our full-scale bonding autoclave systems are custom designed to each customer's needs. That includes extremely large-diameter autoclaves that must be fabricated and assembled on-site.

*McGill AirPressure installed this 15-foot-diameter by 55-foot-long vessel as part of a twin-autoclave system for a major aircraft manufacturer.*

*McGill AirPressure's bonding autoclave systems are used to bond a variety of composite materials and products. Pictured (left) is a composite aircraft wing assembly and (right) a composite structural frame for a communication satellite.*