

# CNC FRONTGAGE TECHNOLOGY SPEEDS SETUPS, IMPROVES PRODUCTIVITY FOR STEELCRAFT ON STEEL DOOR FRAME FABRICATION

*Door industry leader Steelcraft, Blue Ash, OH, significantly boosted productivity and flexibility at fabricating steel door systems by applying CNC frontgaging on two of its CINCINNATI Autoform press brakes.*

An innovator of commercial steel doors combining attractive design with superior security, Steelcraft used the CNC frontgaging, an option on CINCINNATI press brakes, to cut setup time on door frame components by 50% versus previous mechanical frontgages.

The frontgaging's accurate CNC positioning and fast automatic movement help optimize throughput in Steelcraft's high-volume, high-flex manufacturing operations. The company offers four different door framing systems in a vast range of door widths, heights and jamb sizes. It provides door solutions specifically engineered to particular market needs, including commercial/retail, industrial, education, health care, corporate, entertainment, government/military, hospitality, and transportation.

Frontgaging avoids the time and effort needed to rotate parts when a backgaging is used to bend both edges. This is an important issue with Steelcraft, where door frames can be as long as 10 ft. Instead, both sides of a frame can be processed just by sliding the part between backgaging and frontgaging without taking it off the press brake. Adjustable separation between the frontgaging's twin arms is especially helpful in supporting the long parts.

"Doors and door frames are considered hollow metal parts, and have closer tolerances than standard sheet metal applications," says Brian Wottle, Steelcraft process engineer. "The frontgages



*CNC frontgaging on CINCINNATI Autoform press brakes halves setup time, holds +/-0.015" precision on commercial door system components.*

on our 230-ton x 12 ft. and 350-ton x 14 ft. Autoform presses not only allow us to meet those tight tolerances, but also cut our setup time in half."

The two-axis CNC frontgages move at 1200ipm (508mm/s), speeding into position with repeatability of +/-0.001" (+/-0.025mm). Front-to-back range is 40", and the system works with sheet gage up to 3/16".

Steelcraft holds +/-0.015" on critical frame dimensions, notes Wottle. Dimensional precision is essential for commercial applications where Steelcraft door systems are architecturally specified and applied in engineered structures. The company also offers severe weather systems for tornado- and hurricane-prone areas with

extremely stringent code requirements.

Combining CNC backgaging and frontgaging enables extremely accurate middle-of-part dimensions for multiple bend jobs like the door frames. By comparison, processing multiple bends only on a backgaging would cause any blanking errors to be driven to the center of the part. Frontgaging drives the variance to the folded flanges to maintain precise jamb dimensions.

"Automatic gaging is helpful in an industry that seems to be running out of skilled press brake labor, says Wottle. "There is hardly any learning curve on the frontgaging for anyone who is familiar with CNC presses. Programming is as simple as for a backgaging."

Founded in 1933, Steelcraft introduced the world's first metal doors with honeycomb core in 1957 for enhanced structural integrity while reducing weight. Since 1996 Steelcraft has been a member of Ingersoll-Rand's Security & Safety product family.

CINCINNATI Incorporated has been a leading American manufacturer of metal fabrication machinery for more than a century. Strong investment in engineering and product development drives continuous innovation of advanced technologies for laser cutting, shearing, forming and stamping.