



**PCT**  
Engineered Systems, LLC

# Drop-Bottom Vertical Heat Treat Furnace

Metals

## The Application

To keep up with the high demand for greater-sized aluminum sheets for the fabrication of new, large aircraft, a major aluminum manufacturer decided to add another production center at its plant site.

PCT Engineered Systems' extensive experience with furnace control systems and previous project successes with the manufacturer, led the manufacturer to select PCT as the integrator to provide them with a complete furnace control system for a drop-bottom Vertical Heat Treat Furnace.



## The PCT Solution

PCT provided three control systems for the production center: a control system for the furnace proper that included combustion controls and a light-up station MMI; positioning controls for a large quench tank using AC/Vector Drives; and material-handling controls including radio-controlled cranes for carrying the sheets. In addition to developing the furnace control systems, PCT also provided a motor control house and an operator control house; a motor control center and drive line-up equipment; a construction package and engineering support for the installation of the electric controls; and engineering support for the furnace start-up.

PRACTICE CONTROL					
PARAMETERS	PRESET	CURRENT	PARAMETERS	PRESET	CURRENT
OPERATOR NO.			OVERTEMP		
LOT NO.1	██	██	GEOPNT	██	██
LOT NO.2	██	██	SOAK TEMP	██	██
LOT NO.3	██	██	SOAK TIME	██	██
LOT NO.4	██	██	SOAK WATER TEMP	██	██
WELD	██	██	PRACTICE START TIME	██	██
ALLOY	██	██	SOAK START TIME	██	██
TEMPER	██	██	PREHEAT TIME	██	██
ALOAD	██	██	QUENCH TIME	██	██
REACTOR	██	██	HIGH LOAD TO	██	██
FAN SPEED	██	██	LOW LOAD TO	██	██
WAL	██	██	HIGH AIR TO	██	██
DROP TIME	██	██	LOW AIR TO	██	██
QUENCH	██	██	ACTUAL DROP TIME	██	██
ROTATOR SPEED	██	██			

