



InfraStake Process Sequence

1. The machine extends the InfraStake module and clamps the parts together.
2. The controller turns on the low-flow cooling air and the lamp.
3. The lamp and the low-flow cooling air stay on for the duration of the heat time.
4. The controller turns off the lamp and extends the punch to form the boss, and the high-flow cooling air turns on.
5. When the punch time expires, the punch retracts while the parts are still clamped together. High-flow cooling air remains on.
6. The machine retracts the InfraStake module.
7. When the high-flow cooling time expires, the cooling air switches back to low-flow, and the cooling air timer starts.
8. The low-flow cooling air remains on until the cooling air timer expires.

Note: If the next machine cycle starts before the high-flow timer expires, then the cooling air will switch to low-flow.

Process Parameters

Ramp Time is the first phase of the heat cycle during which the boss ramps up in temperature. Ramp time is the length of time a lamp stays on at full power.

Soak Time is the second phase of the heat cycle during which the heat soaks into the boss. Soak Time is the length of time a Lamp stays on at a reduced power level.

Soak Power is a reduced power level used during the second phase of the heat cycle, during which the heat soaks into the boss.

Total Energy is the energy generated by the lamp during a heat cycle and is the amount needed to form the boss. (Not all of the energy reaches the boss.)

Total Energy = (Ramp Time x 100%) + (Soak Time x Soak Power); if multiplied by the lamp wattage, this gives energy in Joules.

Total Heat Time is the total amount of time the lamp is on during a cycle.

Punch Time is the total time the punch remains extended (stake position). During punch time the punch is typically being cooled with high-flow cooling air so that the melted plastic under the punch solidifies before the punch is retracted. Adequate punch time is required to prevent plastic sticking and stringing during punch retract. Punch time applies to all modules that share a valve group (zone).

Total Cycle Time is the total length of time to complete the InfraStake process.

Smart Adjust intelligently optimizes process parameters. With smart adjust enabled, adjustments to recipe parameters will cause automatic adjustments to other parameters in an intelligent manner in order to minimize smoking. Unless directly changed, Total energy is kept constant.

Boss Height Verification indicates the measured height of the boss relative to the zero position of the analog sensor. The lowest value observed during the boss height check phase is recorded. This may not match the actual boss height depending on sensor accuracy and punch geometry. This data is collected whether or not Boss Height is being monitored, but only if the boss height check phase of the InfraStake cycle occurs (at least one Module must have boss height monitoring enabled).

Stake Height indicates the final position of the Punch during the staking phase of an InfraStake cycle. The lowest value observed during staking is recorded. This data is collected whether or not Stake Height is selected for process monitoring.