

Thermal Processing



Thermal Processor Model 301

GENERAL DESCRIPTION: Branson Thermal Processing Systems are designed for heat staking, thermal insertion, swaging, degating, and date stamping.

THERMAL STAKING: In thermal staking, also referred to as "heading or riveting," the controlled flow of the molten plastic is used to capture or retain another component, joining plastic to plastic, metal, or any other type of material (e.g., printed circuit boards).

BENEFITS OF THERMAL STAKING/ SWAGING:

- Excellent cosmetics.
- Does not cause damage to fragile electronic or other sensitive components.
- Minimal tool wear.
- No flash or particulate are created.
- Extremely tight stakes created.

- Most thermoplastic materials easily staked/swaged.
- Stake one or multiple stakes on multiple planes simultaneously.
- No cracking, splitting, breaking, or stresses applied to bosses.

THERMAL INSERTION: In thermal insertion a metal insert is placed in a boss or hole which is slightly smaller than the insert. This hole provides a certain degree of interference and also serves to guide the insert into place. The heat from the thermal tip travels through the insert to the interface of the metal and plastic. Heat generated by the thermal tip causes the plastic to melt, and as the thermal tip advances, the insert is imbedded into the plastic component. The molten plastic flows into the serrations, flutes, or undercuts of the insert, and when the heat source retracts, the plastic resolidifies and the insert is securely encapsulated in place.

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BENEFITS OF THERMAL INSERTION:

- Multiple inserts at different levels can be seated simultaneously with practically no limit on quantity, size, or plane of the inserts.
- Different sized inserts can be driven simultaneously.
- Few material limitations. Inserting into filled material can be accomplished with less damage to the inserts.
- Process does not produce metal flakes or chips.
- Minimal tool wear.
- Quiet operation.

Branson Model (301-1) Standard Benchtop, Single Zone

STANDARD FEATURES:

- Unitronics operator interface/controller.
- Discrete, full-function temperature controllers with ramp and soak and self-teach mode.
- Temperature control monitoring and alarm.
- Post cooling.
- Shuttle control.

- Dual palm buttons with two hand anti-tie-down.
- 6" bore, 4" stroke, variable tonnage from 3/4 ton to 1-1/2 ton with four ball bearings on two hardened steel shafts, including fine adjustment features for platen height.
- 20" maximum working height without upper and lower tooling.
- Macro and micro adjustment for platen height.
- Pressure regulator, gauge and filter with lock out/tag-out.
- Full positional feedback for software control of beginning and end of stroke signals.

OPTIONS:

- 2, 3, 4, 5, 6, 7, or 8, temperature zones.
- Table with leveling feet or casters.
- Part shuttle with 10" stroke.
- Rotary table.
- Light curtain.
- Automation Ready.
- Opti-Touch Start Buttons.
- Tooling "x-y" Alignment Kits.
- NIST Calibration.

FIXTURING AND TOOLING:

Fixturing and tooling are quoted on a per part basis. Send parts and customer information to the Branson Systems Group in Honeoye Falls, NY, for evaluation.

ELECTRICAL SPECIFICATIONS:

Power requirement:

230V AC, 15 amps, 1Ø, 60 Hz

MECHANICAL SPECIFICATIONS:

Weight: Approx. 320 lbs (145 kg)

Height adjustment: 20" (508 mm)

Throat depth: 6.8" (172.72 mm)

Dimensions:

Overall machine:

20" wide x 24" deep x 48" high
(508 x 609.6 x 1219.2 mm)

Tooling platen: 14" wide x 8" deep
(355.6 x 203.2 mm)

Tooling stroke: 4" (101.6 mm)

Pneumatic requirement:

Clean (5 micron), dry air,
80 psi @ 20 CFM Max

Note: All specifications subject to change without notice.

For further information, please contact Customer Service at Branson, Honeoye Falls, NY, 585-624-8000, ext. 324.

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Note: All sales shall be subject to the Supplier's terms and conditions of sale as described in Branson's quotations and sales contracts.

Warranty: Branson's Thermal Processor is warranted to be free from defects in materials and workmanship for one year. Heaters are warranted for 90 days.

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