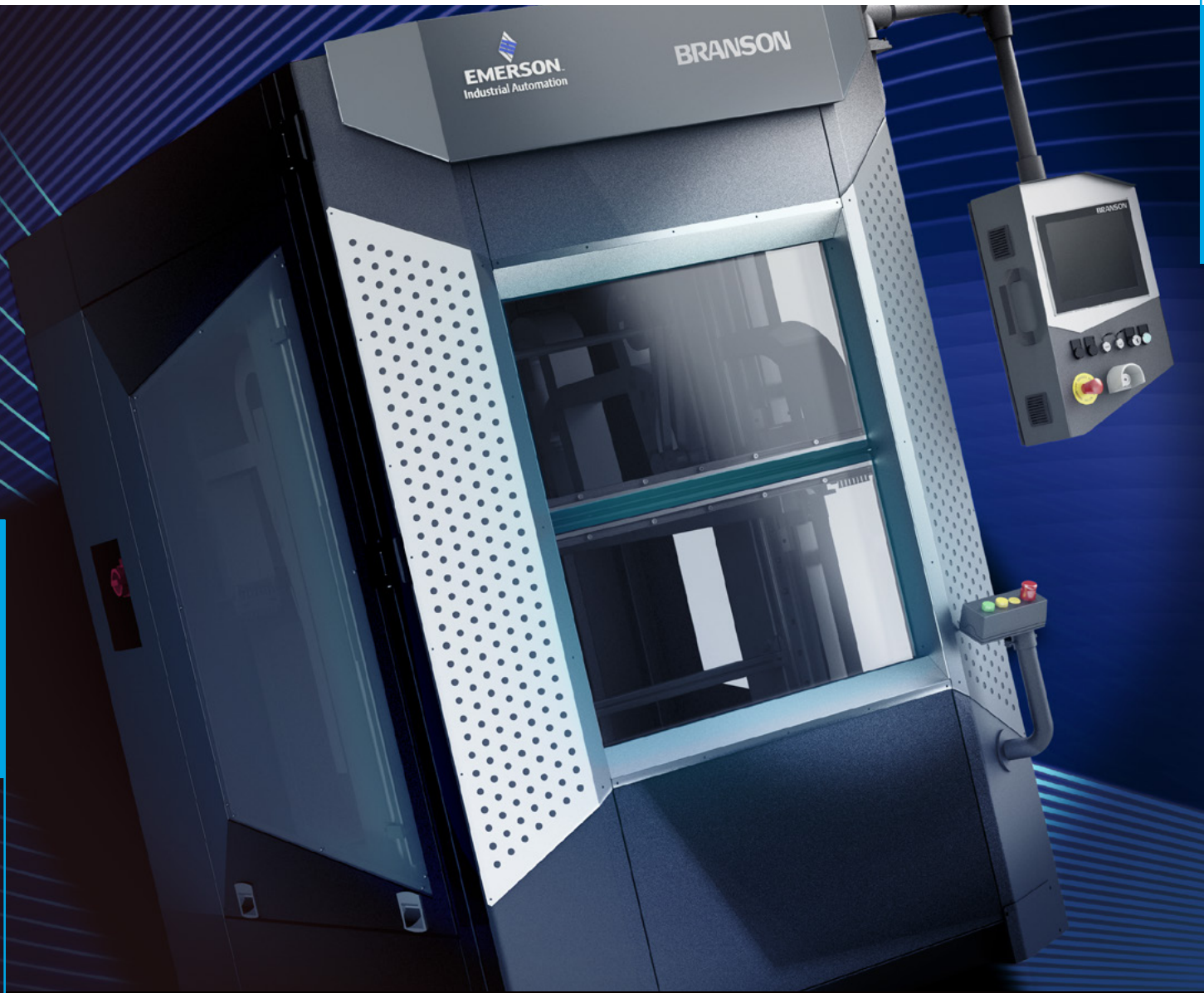


**BRANSON**



## Contoured Infrared Technology

Non Contact Plastic Welding for Particulate-free  
and Aesthetically Clean Joints

# Proven to Deliver Exceptional Aesthetics and Superior Performance

Important trends in the plastics industry have raised the standards for plastic weld joints. The increasing use of low-viscous polymers, high-temperature formulations, functional fillers, and the need for superior bonding of unlike materials have added complexity to the plastic assembly process. Designers are demanding parts with particulate-free, visible

weld lines, giving them design flexibility, part integrity, and manufacturing efficiency in their products. Branson CIT is an advanced clean-joining technology that meets these growing market trends

CLEAN  
VIBRATION  
TECHNOLOGY

CONTOURED  
INFRARED  
TECHNOLOGY

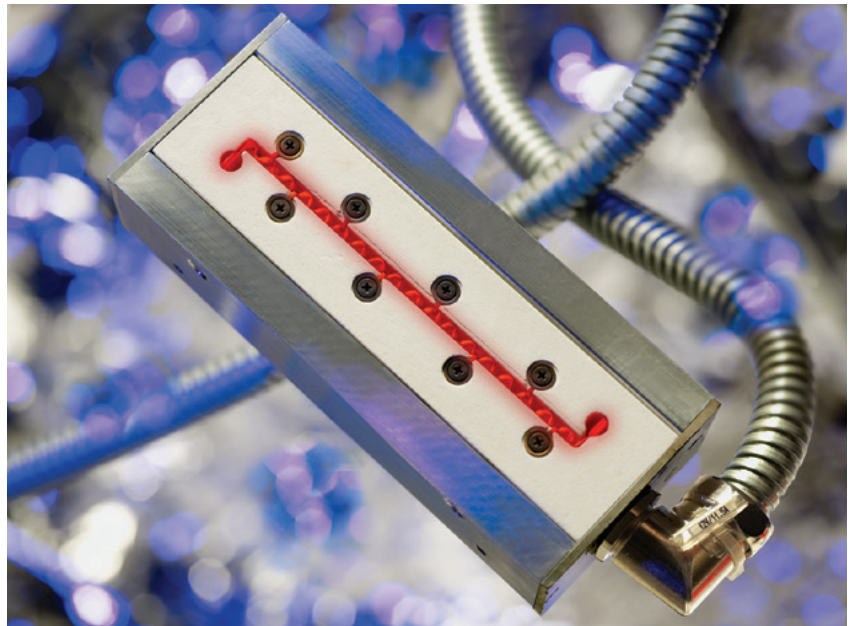
CONTOURED  
LASER  
TECHNOLOGY

CLEAN JOINING TECHNOLOGIES



Water reservoir for home appliance

A contoured metal-foil emitter in a ceramic housing conforms precisely to the weld lines and pre-heats the two parts' surfaces to be joined in seconds.



## True Global Support & Service

Every BRANSON CIT installation is backed by our proven commitment to providing superior global technology, support, and customer service through a worldwide network of 70 offices. Branson is part of the Industrial Automation division of Emerson, a diversified international manufacturing and technology company committed to developing technological breakthroughs that enhance the performance of a wide range of products and processes.

# BRANSON Contoured Infrared Technology (CIT) – High-Efficiency Clean Welding

## Branson Meets the New Demands of Today's Plastics Industry

- **Clean, clear, weld-bead aesthetics:**

The welds created with Branson CIT are virtually free of the particulates that can complicate downstream manufacturing, as well as compromise the aesthetics or performance of the end product.

- **Enhanced design flexibility:** Clean optical welds allow engineers to incorporate the weld lines into their product designs, even in applications with complex 2D and 3D moldings.

- **A range of sizes:** Branson CIT is available in two models that can accommodate a wide range of applications.

- **Energy-efficient and cost-effective:** CIT can create clear-to-clear, opaque-to-opaque, or clear-to-opaque joints with or without additives by employing metal-foil IR emitters that have emission wavelengths that match the absorption characteristics of most polymers used in the industry today. The result:

- Faster, more efficient welds
- More compact flash
- Shortened cycle times
- Less material smoke
- Less energy consumption during manufacturing.

- **A range of applications:** CIT is ideal for clean, precision joining of such parts as automobile instrument panels, fluid reservoirs, vehicle interiors, small home appliances, medical technology products, or any part or product that requires a clean weld that maximizes aesthetics, integrity, and functionality.



CIT results in clean, clear joints that give designers the flexibility to incorporate the weld lines into the design of the product.



Close-up of finished CIT assembly showing a clean joint



# How Contoured Infrared Technology (CIT) Works

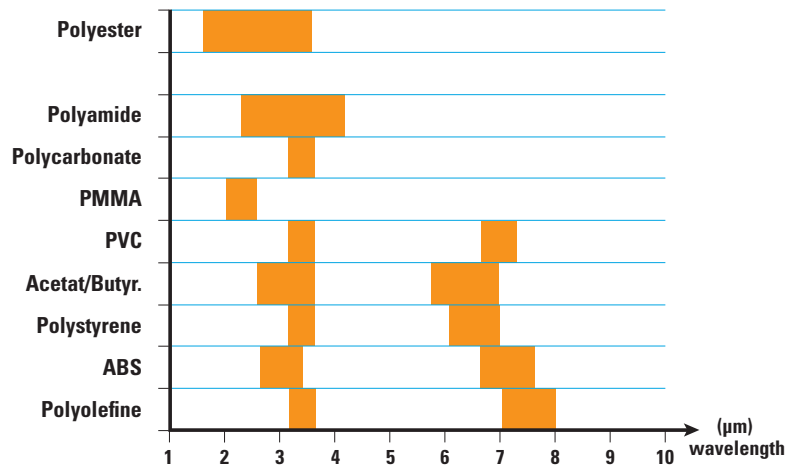
Branson Contoured Infrared Technology can be used for clean joining small, medium, and large parts. It is uniquely capable of handling large, 3D-contoured parts that require high mechanical clamp loads and, due to part design constraints, do not allow relative motion between the parts during welding.

Precise plasticization occurs using non-contact heat input by medium-wave, metal-foil emitters that emit the same wavelength spectrum as the absorption range of most common thermoplastics. They are robust, precisely controlled and have low energy use.

During the CIT process, the two part halves to be joined are held in position a few millimeters from the metal-foil-emitter platen that follows the contoured profile of the weld seam. The platen uniformly pre-heats the weld area only – with no damage to pre-assembled inner parts. Once

plasticization has occurred, the platen is removed, and the halves are brought together under pressure and allowed to re-solidify, producing a clean, clear, weld that is virtually particle-free.

### Absorption Chart



CIT metal-foil heaters emit infrared wavelengths matched to the absorption characteristics of most polymers. The result is more efficient heat transfer to the parts and reduced cycle times.

## CIT emitters are contoured to the joint line of the parts and provide non-contact heat to only the targeted weld areas



CIT allows for clean joining of large, contoured parts such as the housing for instrument cluster and the HVAC ductwork behind a dashboard.



Water reservoir for home appliance.

# IPC-Based Communication For On-site or Remote System Monitoring

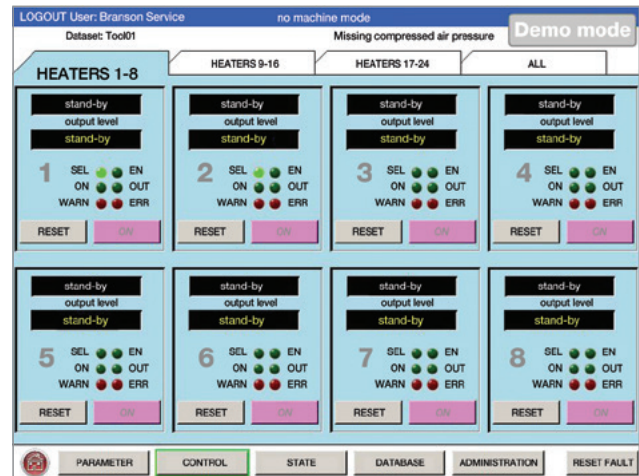
The CIT software offers a user-friendly interface and multi-functionality options for machine operation, parameter set points, and data acquisition.

## Process and machine data can be evaluated remotely

Networking capability of the CIT software includes communication between the machines and factory network technicians, as well as remote access via the Internet for evaluating and trouble-shooting such important set values as cycle times, position of the axes, weld parameters, and many others.

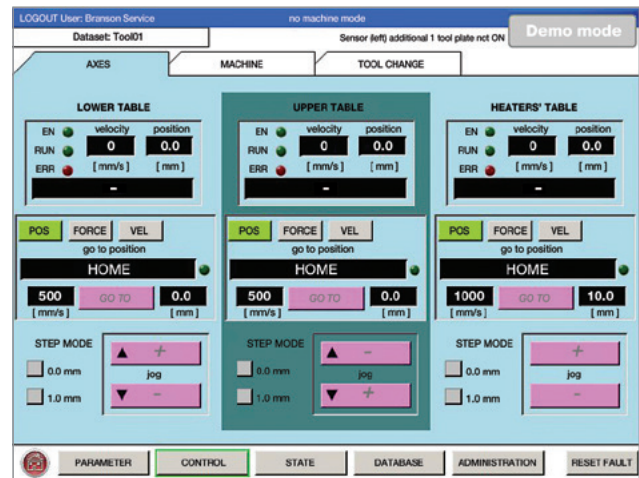
The built-in network and tele-service capabilities allow for the CIT machine technicians to be in communication with every phase of the production process.

## IR Emitters

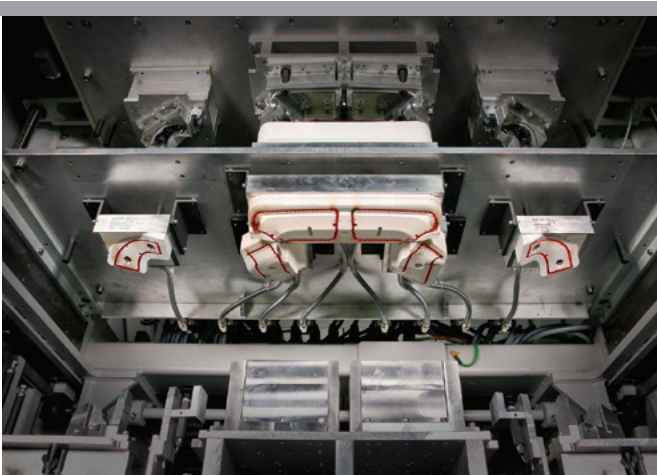


IR Emitter Control Screen

## Machine Interface



Parameters for lower servo driven lift table.



CIT emitters are positioned on both top and bottom of servo driven platen so both parts are heated simultaneously.

## The Branson Advantage

## Specifications

Model	IR-170/80 Si	IR-80/50 Si
Machine dimensions (H x W x D)	3,475 mm x 2,600 mm x 3,420 mm	2,920 mm x 1,200 mm x 2,700 mm
Weight	7,800 kg	2,300 kg
Upper / lower tooling interface (W x D)	1,700 mm x 800 mm	810 mm x 456 mm
IR emitter support (W x D)	1,780 mm x 800 mm	600 mm x 250 mm
Axis drive	Spindle drive, servo motor, closed-loop force control	
Machine control	Branson industrial PC / IR100	
Max. quantity of heating circuits	40	24
Max. quantity of heating circuits with extended cabinet	80	40

Branson is committed to not only engineering and supplying CIT equipment to meet your needs, but also to providing applications support, employee training, troubleshooting, and ongoing customer service so that your equipment continually operates as expected. To learn more about Contoured Infrared Technology, contact your BRANSON representative or call the BRANSON office in your area.

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All specifications subject to change without notice. All dimensions are nominal.

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