



bcbWeldIR®

Powered by **bcb**Monitor 4.0®

Thermographic system for Brazing quality control

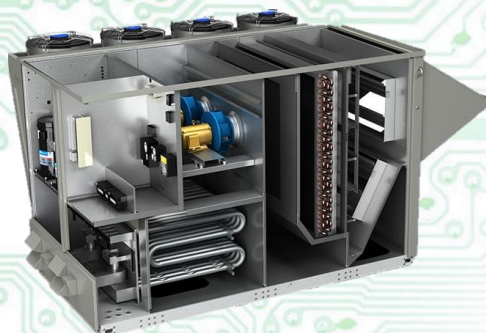
Leading companies in the Automotive and Home Appliances sector benefit from its use.

Refrigeration machines, automotive radiators, air conditioning, heaters... all of them have heat exchangers with coils and joints (elbows) in their piping, through which a fluid circulates that exchanges heat.

Welding is called brazing: with an intermediate metal ring. It can be done with a torch or by induction. It is done by hand or automatically (In fixture cells or Autobraze).

At the piping weld points there are failures to break (overweld) or leaks (underweld).

This causes at least 10-15% of warranty claims. The operator, with all his experience and expertise, cannot perceive all the occasions when there is an abnormality in the splicing and it is not until the stations of final test where these

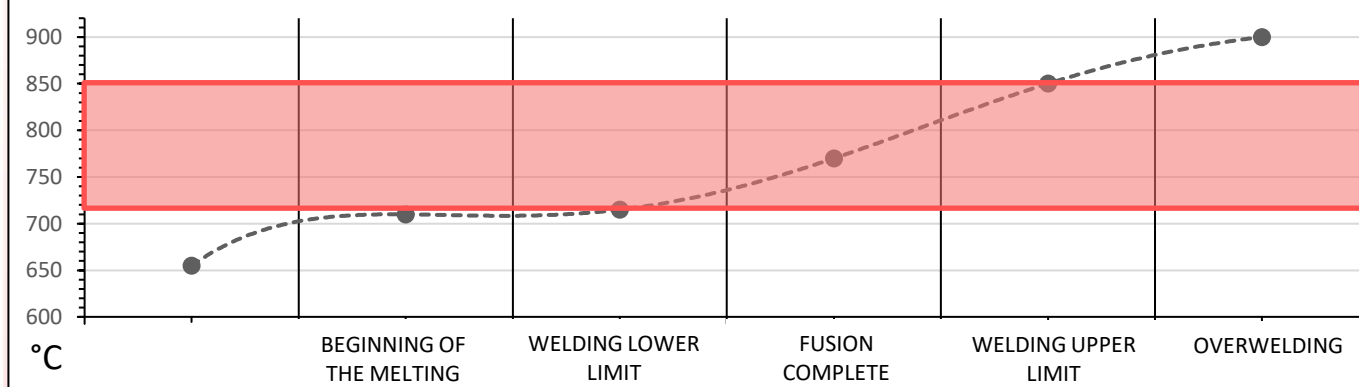


The interior of an HVAC is cluttered with various pipe connections.

defects are detected and the rework operations are more complicated since all the equipment is already assembled.

Faced with the problems described above, quality engineers have found in thermography a non-contact inspection technique in real time to point out defective thermal joints.

MELTING STAGES OF COPPER WELDING



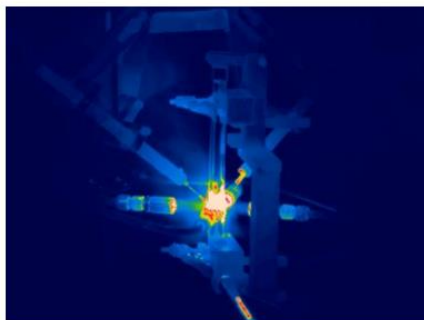
Official dealer & integrator



TELEDYNE FLIR
Everywhere you look

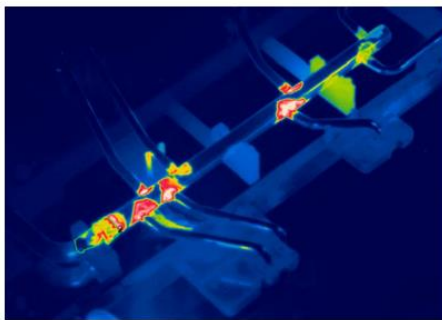
bcbWeldIR: Thermographic System for Brazing

THE THREE TYPES OF BRAZING SOLDERING STATION



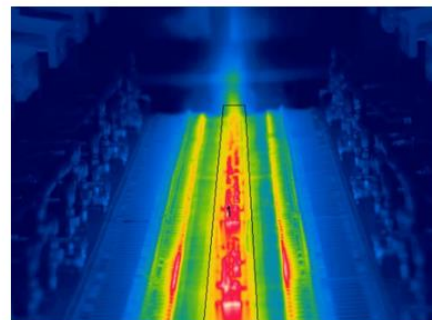
Manual Brazing

An operator performs the welding of multiple joints of various components.



Brazing Cell

Welding is done by robots on different fixtures depending on the part number.



Autobrazo

The body of the evaporator or condenser is passed through a conveyor with burners.

Using this method, the intervention to repair a defective weld is immediate, simple and more economical.

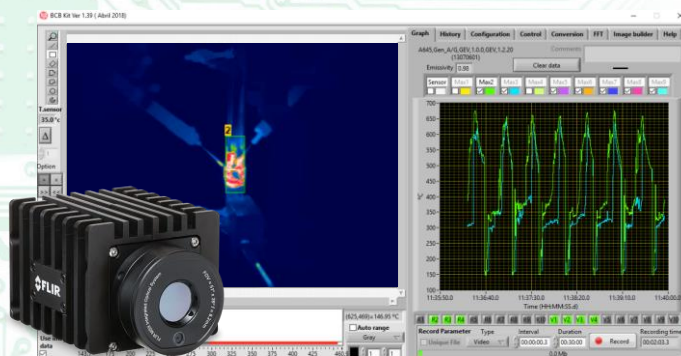
This inspection system, called **bcbWeldIR**, is essentially made up of a fixed thermographic camera, which has a measurement range that goes from room temperature to 1000°C, enough to analyze all the fusion stages of the welding element.

After the essential intervention of the thermographic sensor in the measurement of the temperatures reached in the thermal junction, the **bcbWeldIR** processes the results in real time and outputs them in three ways: instantly to the PLC or MES of the cell or line, instantly through audible and visual alarms (a buzzer and an indicator light on the floor) and also on a diagnostic screen at the end of welding of all points on the part in question. All of the above in a very ergonomic environment for the operator and process machinery.

Software

The system recognizes the part in turn because at the beginning of the procedure the operator scans its code. Upon receipt in the **bcbWeldIR**, the instruction to start a new cycle is issued, which will end with the welding of the last joint point, subsequently granting the results to the operator and registering the aforementioned results in the local and corporate databases for complete traceability.

Quality requirements tend to be very high in industries such as automotive and household appliances. An example of them is the CQI-29 standard, which **bcbWeldIR** users admit to seeing much better compliance after using the thermographic system.



*The **bcbWeldIR** can be adapted according to the type and level of automation of each company.*

Bcb España

Fernando el Católico 11
28015 Madrid
Tel. (+34) 91 758 0050

info@bcb.es

www.bcbingenieria.com

bcb México

Homero 538-303
Polanco V sección
Del. Miguel Hidalgo
11560 Ciudad de México
Tel. (+52) 55 9183 0547 Ext. 7547
Sucursal Monterrey Tel. (+52) 81 1041 2616

info@bcbmex.com

www.bcbingenieria.com

