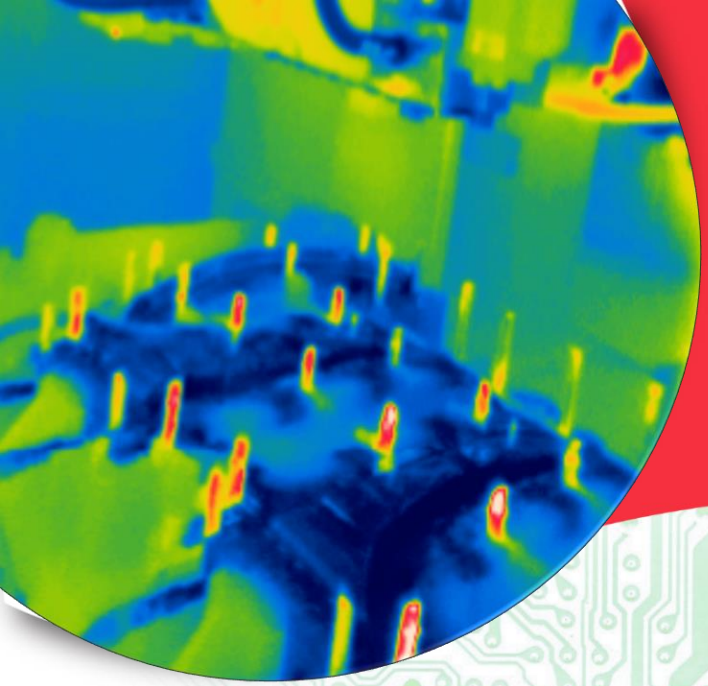


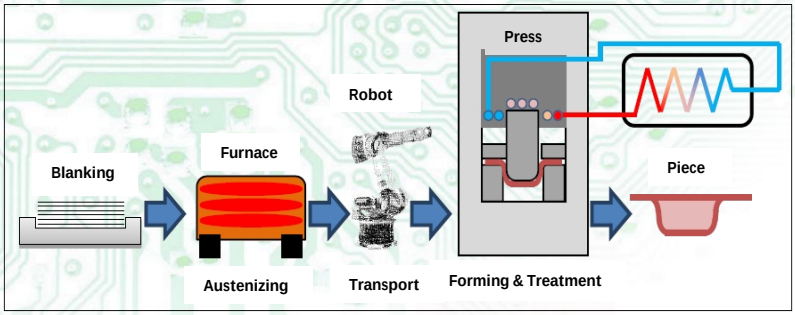
bcbDieScan®

Powered by bcbMonitor5

Thermal monitoring in hot forming processes

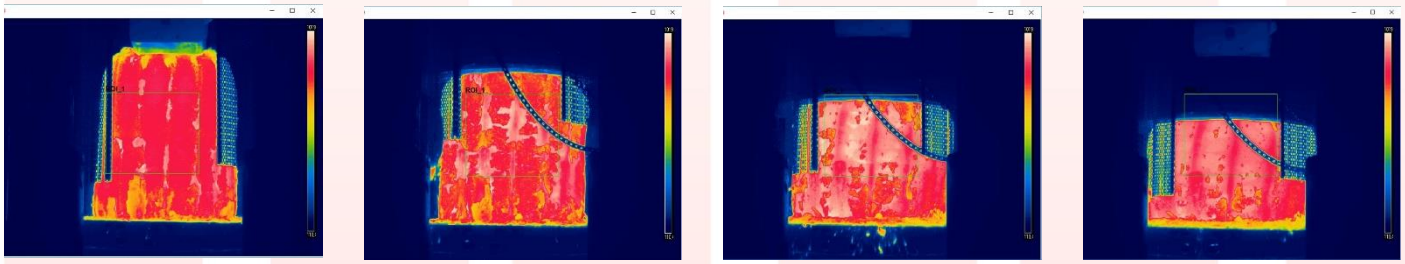
Hot forming processes are based on combining a deformation operation of the base material (blank, ingots, billet, to name a few examples) at high temperature with a subsequent quenching treatment. When hot, the material is more ductile and the part deforms with lower forces. Subsequent rapid cooling gives it its high-strength martensitic structure. The microstructure and final properties of the manufactured part are strictly linked to a good control of the temperatures, times and applied deformations.

Large temperature differences in the part or in the die during the process, lead to the appearance of inhomogeneous deformations that can take the manufactured part out of its tolerances.



The hot stamping process can be taken as the conventional example of hot forming processes

That is why manufacturing engineers require a thermal measurement of hot forming cycles to assess either the evolution of the temperature in the part before and after deformation, or the correct cooling of the die. **FLIR** thermal imaging cameras, together with the powerful **bcbDieScan**, image processing software, allow the entire process to be monitored and independently and continuously locate thermal imbalances, generating alarms in different formats that promptly report the incident. Based on our intelligent thermographic monitoring system **bcbMonitor5**.

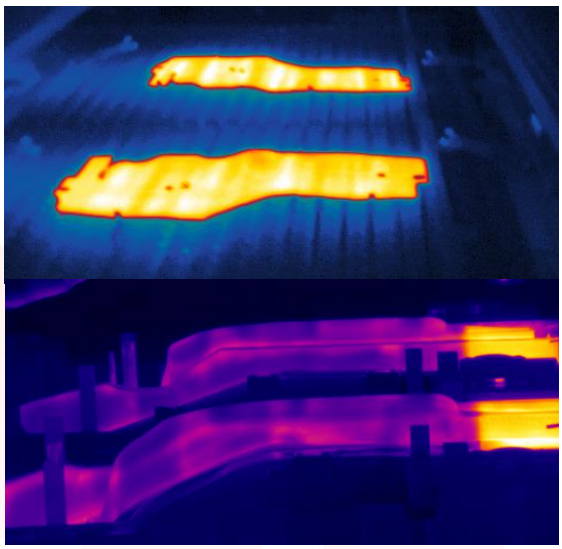


Steel billet forming sequence for the manufacture of rolled rings. Thermographic monitoring applies to both the part and the dies.

Official dealer & integrator FLIR

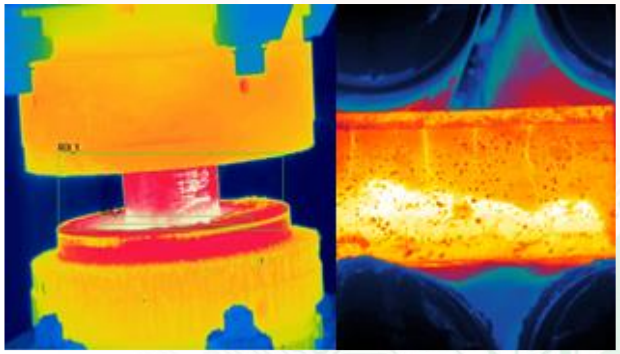
bcbDieScan– Hot forming

Hot Forming



The blanks can come out of the oven in groups of 2 to 4 pieces at a temperature ranging between 900 and 1000 ° C. The **bcbDieScan** incorporates an individual scan function for each stage to avoid an incomplete image due to output offset or robot obstructions.

In the press area, a second check of the temperature of the platen can be done, as it loses a lot of heat during the transfer from the centering table. In addition to this, the inspection of both dies is essential to know that the cooling is adequate and that there are no blockages in the pipes.

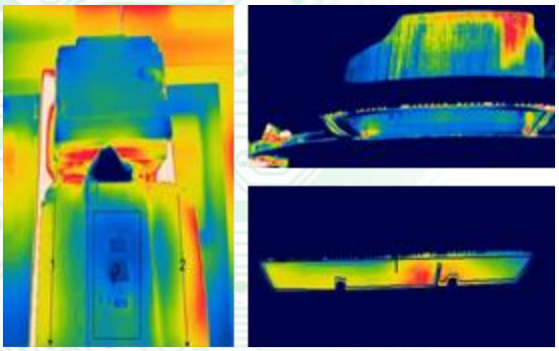


Forge

The dies require strict temperature control to achieve a correct shaping of the billet or ingots, which in turn benefit from the use of thermography to check temperatures at the exit of the furnace. preheating.

Thermoforming

A polymer sheet is heated to the thermoelastic range. The margin of error must be minimal, because if the sheet is overheated it melts and if it arrives cold the product will present notable discontinuities. Thermographic monitoring is necessary to maintain an adequate process temperature, both in the sheet and in the molds.



The bcbDieScan, in conjunction with FLIR automation cameras, is an excellent tool for monitoring and controlling these processes.

bcb
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 1089 4456
info@bcbmex.com
www.bcbingenieria.com