new

hotset

Z-System

Partial dynamic temperature control

- Partial, dynamic cavity heating with up to 60 Kelvin/second (K/s)
- No cycle time extension
- Cycle time savings are possible by lowering the basic temperature of the tool
- Minimum energy costs (with sample tool "ice scraper" Ø 100 W)
- No licence costs
- Easy operation and integration into the production environment
- Trademark rights are registered

Application examples

- Weld lines
- Jetting
- Thin-wall technology
- Partial optimization of the impression
- Surface defects (e.g. dullness)

The Z-System is a collaborative project of the company Hotset GmbH and the Plastics Institute (KIMW) in Lüdenscheid, Germany.

Your contact partner

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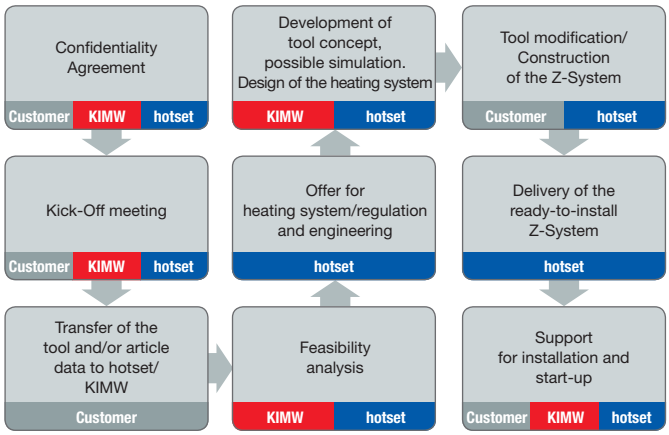
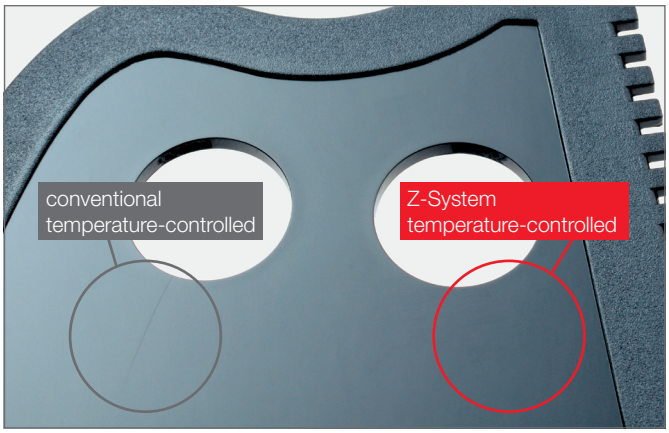
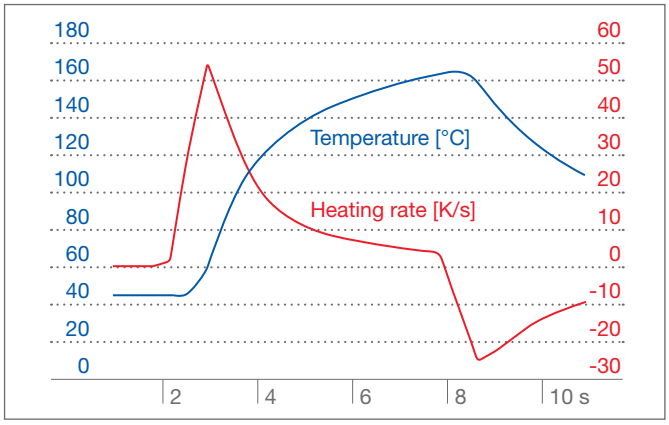
Possible project procedure

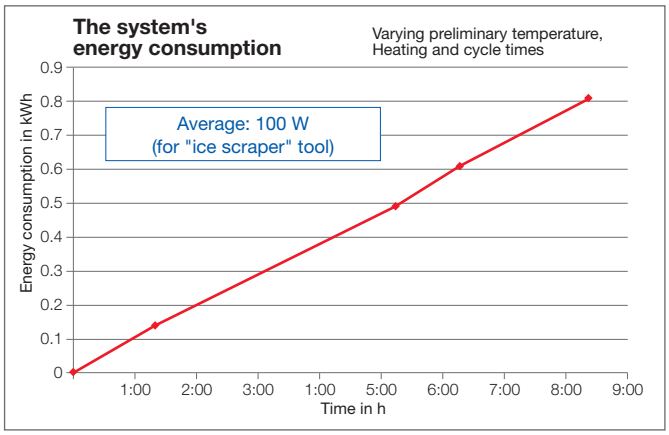




Example from the Z-System: Preventing weld lines



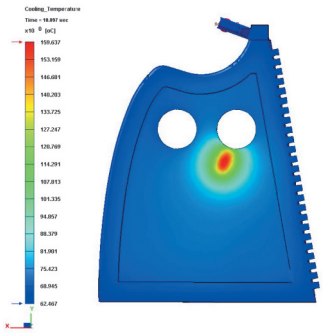
Heating rate



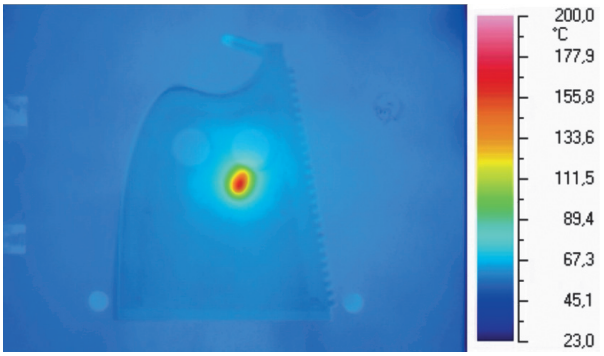
Energy requirement

Example „ice scraper“

Simulation



Practice



Comparison of simulation and practice for example tool „ice scraper“

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Z-System

Partial dynamic temperature control

■ applies
◪ applies in part
□ does not apply

	Fluid temperature control		Tool integrated heating		
	Water	Steam	Ceramic	Integrated inductor	Z-System
Technical limits					
Heating of closed tool possible	■	■	■	■	■
Very high temperatures possible - suitable for all thermoplastics	□	◪	■	■	■
Suitable for amorphous thermoplastics	■	■	■	■	■
Suitable for temperature control of large area moulded parts	■	■	■	■	□
Suitable for 2.5D contours	■	■	◪	■	■
Suitable for 3D contours	◪	◪	□	◪	◪
Suitable for high gloss surfaces	■	■	■	■	■
Tool and cooling					
Conventional temperature control channels are sufficient	◪	◪	◪	◪	■
No special tool designs required	■	□	□	◪	◪
Can be retrofitted for existing tools	◪	□	□	◪	◪
Economic aspects					
Low system costs	◪	□	□	□	■
Low additional costs for tools	◪	□	□	◪	■
Low energy and operating costs	◪	□	■	■	■
Low additional costs for safety relevant measures	◪	□	■	■	■
Short or cycle-parallel heating time	□	◪	■	■	■
Low or no cycle time extension	◪	◪	◪	■	■
Heating universally applicable for all other tools	■	■	□	◪	◪
Safety					
Low safety-technical risks	◪	□	■	■	■
Procedural applications					
Partial prevention of visible weld lines	■	■	■	■	■
Partial flow medium (integral hinge, thin segments)	■	■	■	■	■
Partial micro-structures	■	■	■	■	■
Foam injection moulding of thermoplastics	◪	■	■	■	□
Full-area heating	■	■	■	■	□
Technical performance					
Maximum attainable temperature [°C]	200	160	>> 200	>> 200	>> 200
Maximum attainable temperature [°F]	392	320	>> 392	>> 392	>> 392
Heating speed [K/s]	4-7	10-15	20	20-50	25-60
Pressure [bar]	18-20	7-6	0	0	0
General conditions					
Structural requirements specification (power supply, safety devices)	generally available	depending on performance	generally available	depending on performance	generally available

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