



VACUUM HARDENING MOLDS & DIES

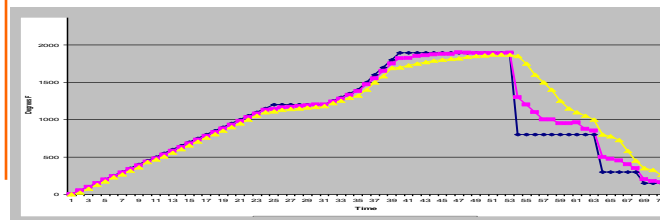
- **Maximize Tool Life**
- **Better Metallurgical Properties**
- **Reliable**
- **Less Distortion**

Insuring maximum metallurgical properties during heat treatment is probably the most important factor to maximize Tool Life. With our vacuum furnace we have the capability to control heating very accurately with up to 12 thermocouples placed directly into the surface as well as core of the die. By allowing the surface and core to equalize when ramping up as well as during the quench will minimize distortion & cracking. This is accomplished with our computer controlled cycles and guaranteed soak steps.

Stress relieving can be accomplished during the hardening cycle by holding at the stress relief temperature before proceeding to the Austenitizing temperature.

Interrupting the quench and holding just above the Martensite start temperature to allow surface and core to equalize will reduce stress levels, prevent distortion and quench cracking.

Fluidized Bed Tempering provides better temperature uniformity, (within 5 °F) less thermal stress and less chance of distortion with a clean scale free surface, therefore no sandblasting is required. Actual contact of heating medium (aluminum oxide particles) with steel surface allows faster heating for more uniform tempering of surface and core and complete transformation to tempered Martensite.




10 BAR VACUUM FOR **CLEAN- HARDENING** OF PUNCHES, DIES & MOLDS FOR BETTER DISTORTION CONTROL AND METALLURGICAL PROPERTIES= BETTER QUALITY TOOLING



FEATURES:

- Tool steels: H-13, D-2, S-7, A-2, 420 SS, CPM 10V, M-2, DH-21, W303, Tuff Die
- 3500 pound capacity, 36" X 36" X 48"
- Fluid bed tempering—More uniform heating-transformation=better toughness.
- Cooling rate as fast as 200°F / min to insure thru hardening of large section size
- Interrupted quench=less distortion.
- 100% computer controlled.

Achieve the Optimum in Heat Treating Quality on Molds & Dies

- Approved for:
 - General Motors HPDC-G-2
 - Ford Motor Co. AMTD 2010 rev L DaimlerChrysler NP 2080
- Meets the requirements of:
 - NADCA 207-2011
 - AMS 2750E
- Better Dimensional Control= less grind stock to machine after H.T.
- When combined with **DYNA-BUE®**, reduce tooling costs 50% or more.
- ISO 9001-2008  TÜV Rheinland®
Precisely Right.
- Tier 1 Supplier
- Better Metallurgical Properties
- Competitive Pricing
- 2-3 day turnaround typical
- Partnered with Willie Horton Inc for minority credits

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