

PROCESS SPECIFICATION

DELPHI SAGINAW STEERING SYSTEMS

TITLE Tool Material Heat Treatment NUMBER E-2636
ISSUED BY C. R. Martin DATE 4/30/96 APPROVED BY _____
REVISION C REV. DATE 08JL2003 SHEET 1 OF 1

- A. Material to be heat treated: **Cartech M50**
- B. Heat treat as specified:
1. Preheat at 900°F.
 2. Preheat in salt at 1450 to 1550°F.
 3. Heat in salt to 2020°F.
 4. Hold at temperature for 10 minutes, maximum.
 5. Quench to 1000°F. in salt.
 6. Air cool to room temperature.
 7. Temper at 1060 to 1075°F. for two hours. Then cool to room temperature.
 8. Deep freeze at - 120°F. Deep freeze time dependent on tool section size and to be determined by heat treater. Allow tools to warm to room temperature.
 9. Temper at 1060 to 1075°F. for two hours. Air cool to room temperature.
- C. Stress relieve after final machining at 900°F.
- D. Using heat treatment shown above will give a hardness range of HRC 60-62.
- E. No carburization or decarburization allowed.
- F. Any tooling heat treated in salt, which contains holes, must have holes cleaned of all salt.
- G. Heat treatment certification, when requested, shall include:
1. Heat treat shop number
 2. P.O. number accompanying job
 3. Type of material heat treated
 4. Size and quantity of tooling batch heat treated
 5. Resulting hardness
 6. Xerox copy of material tracking chart containing furnace times and temperatures.
 7. Date when hardness tester last calibrated.
- H. Heat treatment per this specification is to be carried out only by approved sources as listed in specification E-2600.

Revision	Revision Description	By	Date
A	Distribution list updated.	CRM	5/16/96
B	Distribution list revised. Format update.	DN	1/24/01
C	Distribution note removed. Approved source note added.	DN	08JL2003

http://www.delphisuppliers.com/vendor_documents/delphi-s/index.html

Note: The above specifications were developed without considering whether patents may or may not be involved.
In all cases, therefore, the supplier shall be required to assume patent liability.