

PROCESS SPECIFICATION

DELPHI SAGINAW STEERING SYSTEMS

TITLE Tool Material Heat Treatment - D2 NUMBER E-2629
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: **D2**
- B. Heat treat as specified: (Heat slowly)
1. Preheat slowly at 1400 to 1550°F.
 2. High heat at 1800 to 1850°F.
 3. Air quench as evenly as possible on all sides.
 4. When salt quenching, quench in salt bath at 1000°F, holding only long enough to equalize temperature; then air cool.
 5. After tool has cooled to 120 to 150°F, double temper immediately at either a) 400 to 600°F or b) 1000 to 1200°F.
 6. Allow to cool to room temperature between tempers.
- C. Stress relieve, if specified, after final machining at a temperature which is 50 to 100 degrees lower than the tempering temperature used. The stress relieving temperature should not, in any way, affect the hardness of the material.
- D. Using heat treatment shown above will give a hardness range of 52 to 61 Rockwell C. Required hardness will be noted on print. Heat treat accordingly.
- E. No carburization or decarburization allowed.
- F. 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.
- G. 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 updated. Tempering temperature option b) 1000-1200°F added. Hardness range changed from 56-61 to 52-61 Rc.	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.