

PROCESS SPECIFICATION

DELPHI SAGINAW STEERING SYSTEMS

TITLE Tool Material Heat Treatment – CPM 3V NUMBER E-2656
ISSUED BY D. Nicholas DATE 11/22/02 APPROVED BY _____
REVISION A REV. DATE 08JL2003 SHEET 1 OF 1

- A. Material to be heat treated: **CPM 3V**
- B. Heat treatment for salt bath.
- C. Heat treat as specified:
1. Preheat slowly to 815 to 845°C.
 2. High heat at 1025 to 1120°C. Hold 30 to 45 minutes at temp.
 3. Salt Quench to 540°C.
 4. Air cool to 50°C or below
 5. Triple temper immediately, 4 hours minimum at 540 to 565°C for each temper.
 6. Air cool to room temperature between tempers.
- D. Stress relieve after final machining at 15 to 30°C below final tempering temperature. Hold at temp for 2 hours, then air cool.
- E. Using heat treatment shown above will give a hardness range of 54 to 60 Rockwell C. Required hardness will be noted on print. Heat treat accordingly.
- F. No carburization or decarburization allowed.
- 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.
- I: All printed copies of this specification are FOR REFERENCE ONLY. The latest revision can be viewed on-line at: http://www.delphisuppliers.com/vendor_documents/delphi-s/index.html

Revision	Revision Description	By	Date
A	Note H revised. Note I added.	DN	08JL2003

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.