

EDS

Engineering,
GM DAEWOO Auto & Technology
Standards

THE MEASURING METHOD OF INDUCTION HARDENING DEPTH AND HARDENSS FOR CAMSHAFT

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1. PURPOSE

This standard aims at helping test engineers conduct test in a correct and easy manner by specifying the method of measuring induction hardening depth and hardness of the cam shaft.

2. SCOPE

This standard specifies the method of measuring induction hardening depth and hardness of the induction-hardened cam shaft.

3. DEFINITION OF TERMS

3.1. Induction hardening

Hardening of the steel or cast iron surface by rapid heating with high frequency induction current and ensuing rapid cooling

4. TEST PIECE

4.1. As shown in Fig 1, cut sections "A-A" and "B-B" in the direction of shaft diameter with a cutting machine to get a lobe from the cam shaft.

4.2. In cutting with a cutting machine, sufficient amount of cutting oil shall be applied and the cutting speed shall be appropriate to avoid over-heating of the test piece. Too fast cutting may cause over-heating even with sufficient amount of cutting oil.

4.3. The cut lobe shall be indicated as follows:

4.3.1. Lobes shall be numbered from the cam shaft front.

4.3.2. For each lobe, the front side nose shall be marked "a" and the opposite "b". (See Fig 3.)

4.3.3. For each lobe, the rear side nose shall be marked "c" and the opposite "d". (See Fig 3.)

4.4. Upon completing marking, cut each lobe as shown in Fig 2. In cutting, be sure to avoid over-heating of the test piece as mentioned in clause 2.

4.5. While both cut surfaces may be used for measuring, precise half sections shall be used to avoid errors. Sharp edges formed during casting and cutting shall be removed with a grinder.

4.6. Each cut section shall be ground until becoming a mirror surface and subsequently corroded for some time by 5% NITAL solution until the hardened part and core part are clearly identified.