

EDS

Engineering,
GM DAEWOO Auto & Technology
Standards

METHOD OF HARDENABILITY TEST FOR STEEL

EDS-T-7102

ISSUED DATE: 1988. 11. 18

REVISED DATE: 2006. 06. 19

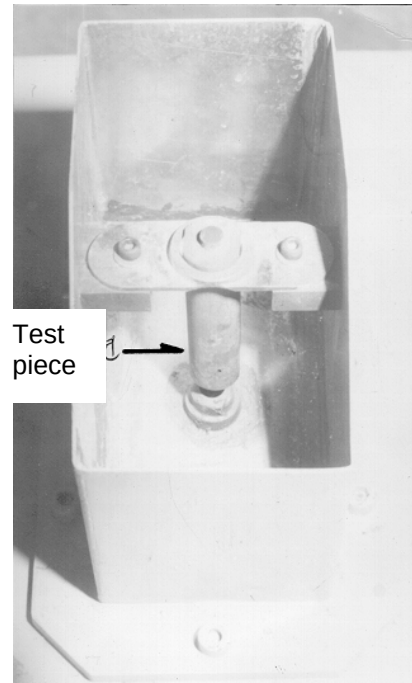
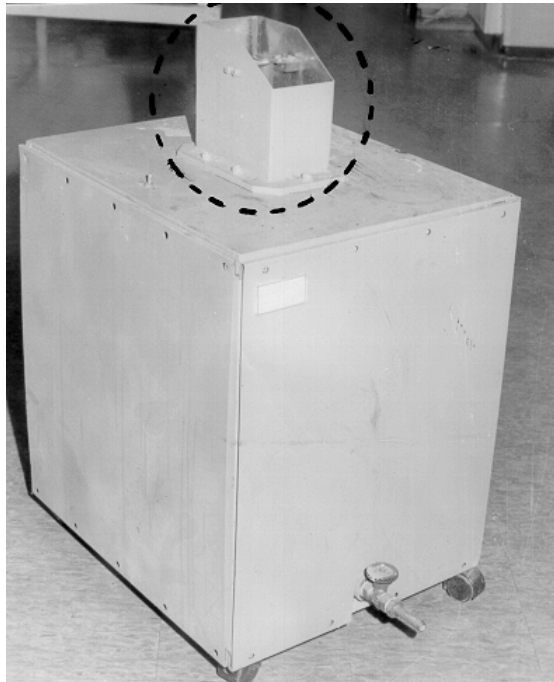
VERSION: 3

Copyright GM DAEWOO AUTO AND TECHNOLOGY COMPANY

1. SCOPE

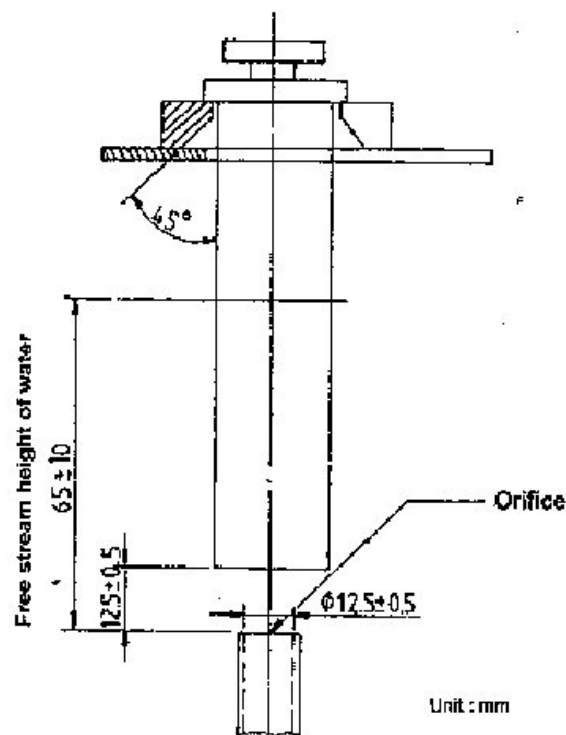
This standard specifies the method of hardenability test for steel based on JOMINY's end quenching method.

2. APPARATUS FOR QUENCHING



2.1. Support for test piece

Test piece shall be supported vertically and its lower end to be quenched shall position rightly 12.5 ± 0.5 mm above the orifice.

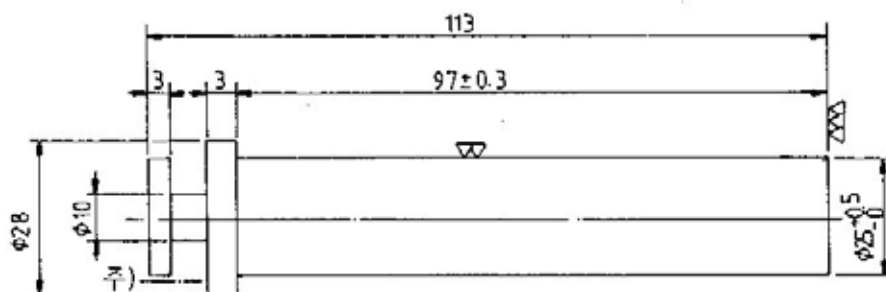


2.2. Apparatus for cooling spray

The apparatus shall make water to spout up from the mouth of the pipe of $12.5 \pm 0.5\text{mm}$ inside diameter to the free height of $65 \pm 10\text{mm}$. The stream of water shall be controlled to attain the specified free height immediately after the commencement of water cooling, and the free stream height shall be kept steady during the cooling process. For this purpose, the tank with the overflow apparatus shall be used, and plate may be preferably inserted between the test piece and the orifice as the stopping device for stream of water.

3. TEST PIECE

3.1. Dimensions



Remark) The shape and dimensions of the portion marked with '----' may be altered as required(Unit: mm).

3.2. Preparation

When the steel material is 50mm or less in diameter, the test specimen shall be used as it is. For steel more than 50mm in diameter, the test specimen shall be forged or rolled to 30mm in diameter. The test specimen thus obtained shall be normalized for 60minutes at a temperature as shown in the Table, removed the decarburized layer from the surface, and then finished to the specified dimensions. The end of the specimen to be water cooled shall be precision finished. The normalizing process, however, may be omitted when agreed. In addition, any heat treatment other than normalizing applied to the specimen or any heat treatment applied to the test piece shall be reported as the heat treating record in the test report. For the steel material more than 50mm in diameter, when agreed, there are two alternative methods for making the test piece.

A specimen of 50mm diameter is machined directly from the steel material to make the test piece of specified dimensions after having been normalized as mentioned above, thus omitting the forging and rolling process, or the test piece of specified dimension is machined out directly from this steel material. However, in either case, the position of the test specimen or test piece taken from the steel material shall be clearly indicated.