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MICROMETER CONTROLLED X-Y TEST-TABLE
FOR ROCKWELL HARDNESS MACHINE

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ACKNOWLEDGEMENT

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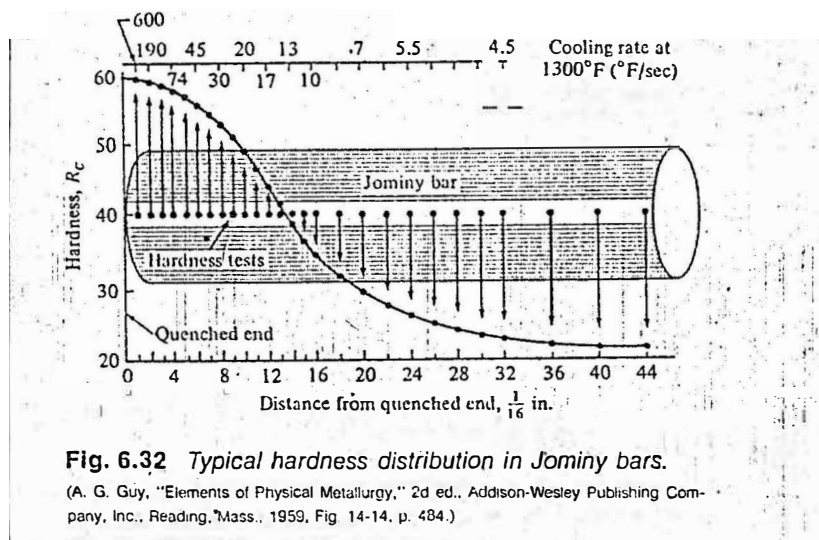
I AM GRATEFUL TO THE MECH. ENGINEERING DEPARTMENT IN ALLOWING ME TO USE SOME EQUIPMENT IN CONDUCTING THE FABRICATION OF MY PROJECT.

LASTLY, I AM ALSO THANKFUL TO ALL INDIVIDUALS WHO HELPED IN THIS PROJECT WHOSE NAMES ARE UNINTENTIONALLY NOT MENTIONED.

1. INTRODUCTION

The Rockwell Hardness Testing Machine that we have now is only suitable for testing small specimens. However sometimes we need to test long specimens especially as in the case of the Jominy Test which is included in Metallurgy course in Semester 3.

The Jominy Bar, 1 in. diameter by 4 in. long, is austenitized, water - quenched on one end, and then tested for hardness along its length.

Fig. 6.32 *Typical hardness distribution in Jominy bars.*
(A. G. Guy, "Elements of Physical Metallurgy," 2d ed., Addison-Wesley Publishing Company, Inc., Reading, Mass., 1959, Fig. 14-14, p. 484.)

But the Rockwell Hardness Testing Machine is not suitable because

    i)   The test bar is long.

    ii)   There is no facilities for measuring the location of the test along the length of the specimen.

So in   view of this, it was thought that a suitable
table will solve these problems. This is why this
project was undertaken.

1.1   DESIGN CHARACTERISTICS

The slide table consists of three main components; the
upper, middle and the lower slide. The slide table is
controlled by two micrometer heads and mounted on a
special fixture. attached to the slide table by using
screws.

The micrometer can move in range up to 25 mm and
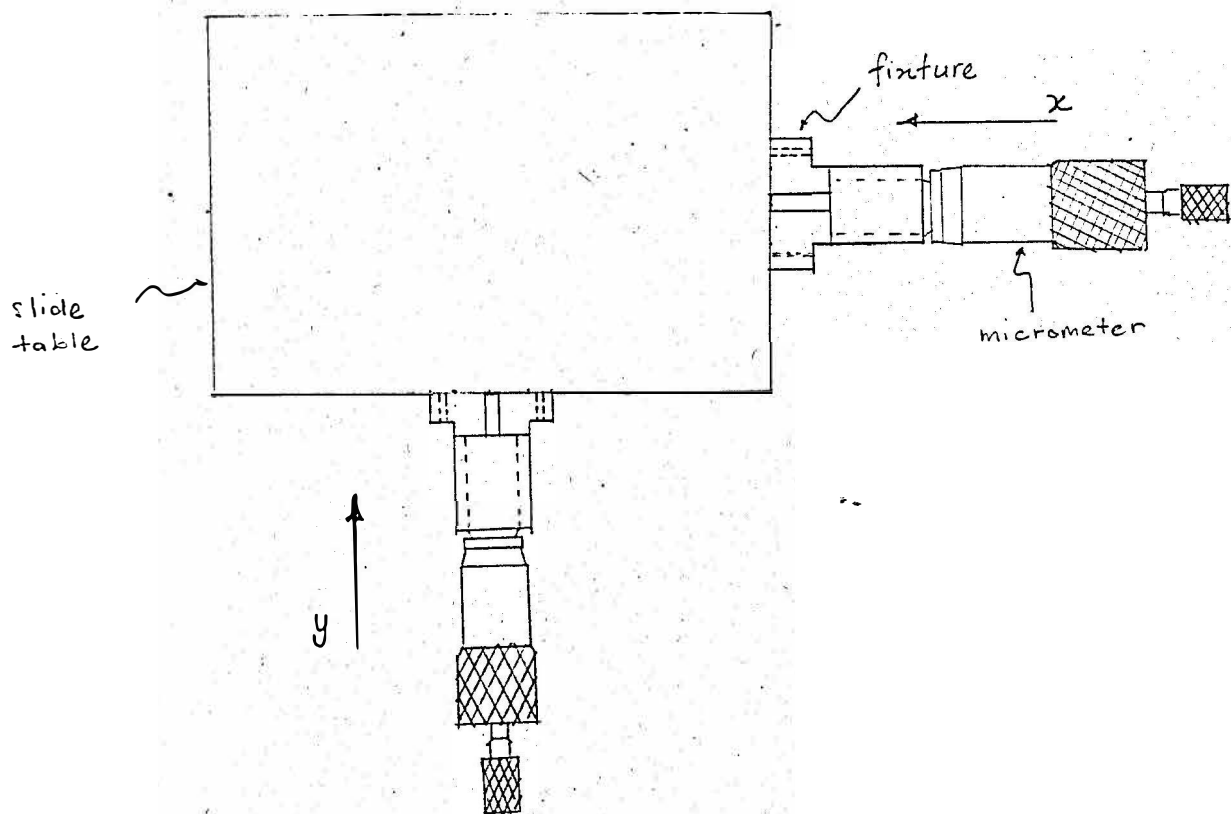control   the slide table in x - y directions.

FIGURE 1.1