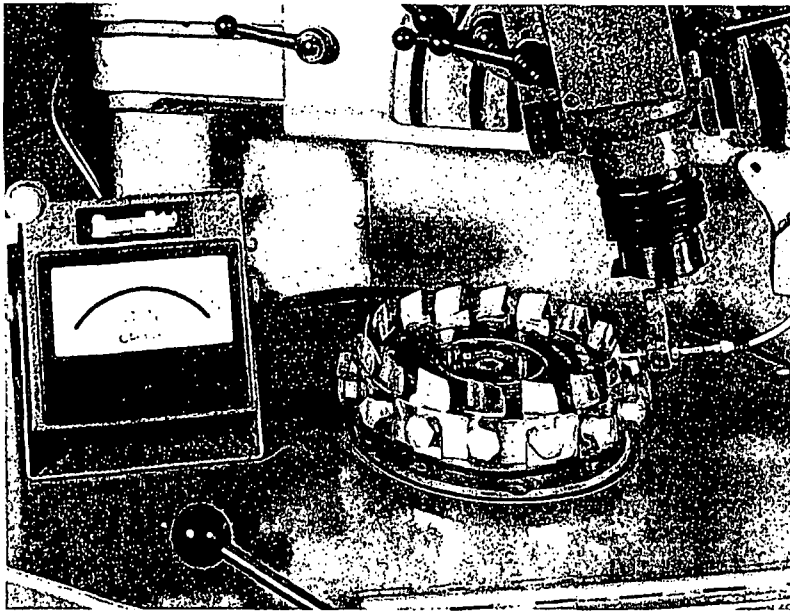


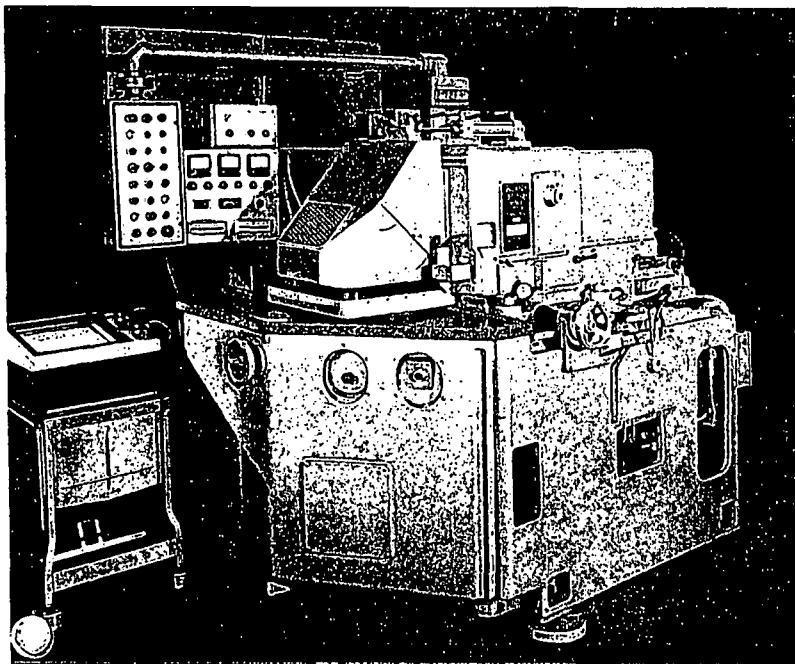


NO. 527 CUTTER INSPECTION MACHINE WITH PROXIMITY GAGING

HARDAC II cutters together with a new gaging method on the No. 527 Cutter Inspection Machine now make it possible to eliminate blade truing on the cutting machine. A proximity-type gage compares the radial position of each blade with that of the master blade. The probe of this gage measures the capacitance of the air gap between the probe and the blade edge without contact. More accurate readings can be made with this system, since readings are not affected by the minute surface variations which affect readings of a contact-type probe.

As a result, cutters can be consistently trued within plus or minus ten millionths of an inch. A HARDAC II cutter trued in this manner will have exactly the correct diameter.

After this cutter is mounted in the finishing machine, it is only necessary to check the cutter head proof surface for runout and to adjust for cutter length. Time-consuming blade truing on the finishing machine is eliminated and machine setting changes are not required to duplicate the desired tooth contact.



NO. 513 HYPOID TESTER ARRANGED FOR SOFT TESTING

The higher cutting speeds, improved cutters, and more accurate generation of the new cutting machines will contribute to producing a highly refined tooth profile surface. It is now possible to judge this surface scientifically and accurately with a new arrangement available on the No. 513 Hypoid Tester.

A special adaptation of the quality measuring system is provided to check the vibration amplitude at various multiples or harmonics of the mesh frequency as a soft pinion is rolled with a mating gear. This check provides a means of quantitatively judging quality. The results of the test can be visually recorded by an X-Y plotter which provides a chart showing vibration amplitude versus harmonics of tooth mesh frequency. The amount of human judgment used in the inspection of soft finish cut pinions is significantly reduced and quality control is correspondingly improved.