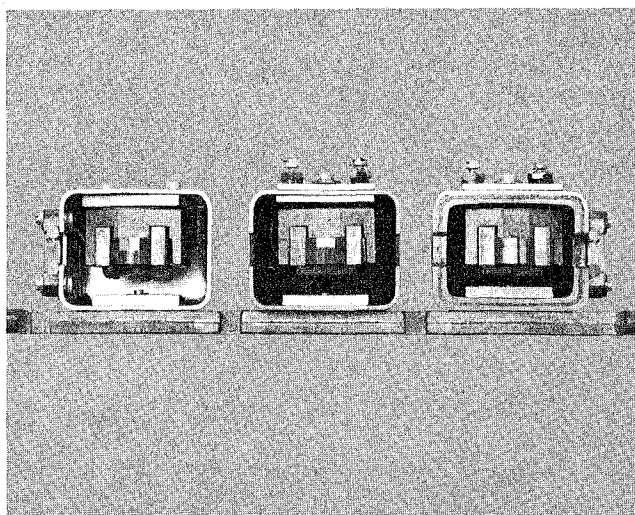


THE AMPEX HEAD

The head assembly of an Ampex magnetic tape recorder is the heart of the equipment. The technical and detailed know-how required for the fabrication of these head assemblies has made Ampex the foremost manufacturer of magnetic recording equipment in the world today.

In theory, a tape recorder head assembly is a simple device. In practice however, building a head assembly is a complicated task requiring extremely precise manufacturing techniques. There are three head stacks in an assembly—erase, record and playback. In recording, the erase head eliminates any previous recording from the tape. The record head puts a new signal on the tape by magnetizing the iron oxide particles in the coating on the tape. In playback, the magnetic flux in the *moving* tape in-



Half-track head assembly

duces a voltage in the playback head.

The design and construction of these heads is extremely critical. Their surfaces are lapped to finishes so smooth that variations are measured in wave lengths of light. In typical playback heads the gap is .00025 inch, which give an indication of the precision required in building the heads.

Each of these heads is designed for a specific function with *no compromise* in the overall head assembly. Professional use demands top performance and there is no room for design compromise.

The superb design, engineering and manufacturing care built into Ampex head assemblies assures dependable long life and econo-

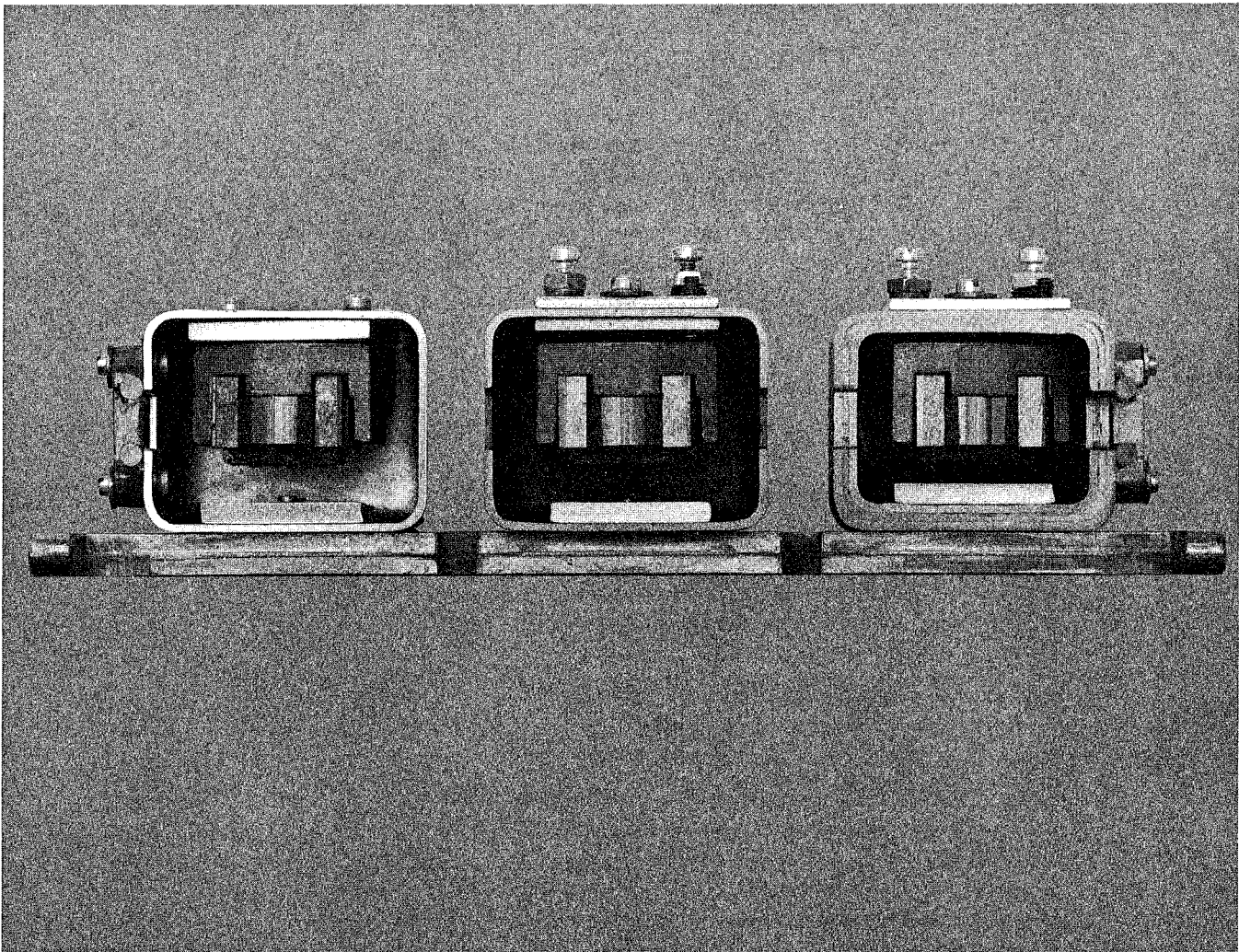
mical operation at the lowest cost per operating hours.

A portion of the section following will describe briefly by photography the different types of heads used in Ampex Series 351 equipment and a few significant features of development and alignment.

Head assemblies of the Multichannel equipment ordered through Ampex Corporation by including information relating to equipment type, equipment serial number, Ampex catalog number and the description of the part.

Head Assembly

The head assembly is housed in a die cast housing and contains three heads used in the



Full-track head assembly

operating process. The heads are respectively erase, record and playback as viewed from left to right when facing the machine. The gate on the assembly holds the playback and record shield covers and the tape-lifting fingers. The function of the tape lifting fingers is to remove the tape from the heads when the gate is open during the REWIND and FAST FORWARD operation. The tape may leave a deposit on the heads if allowed to contact them at high speeds. Such a deposit will seriously impair the performance of the machine and should be guarded against by always opening the gate in the FAST FORWARD and REWIND modes. If a deposit is left, it may be removed by xylene on a soft cloth or tissue. Never use metal of any kind to touch the head surfaces.

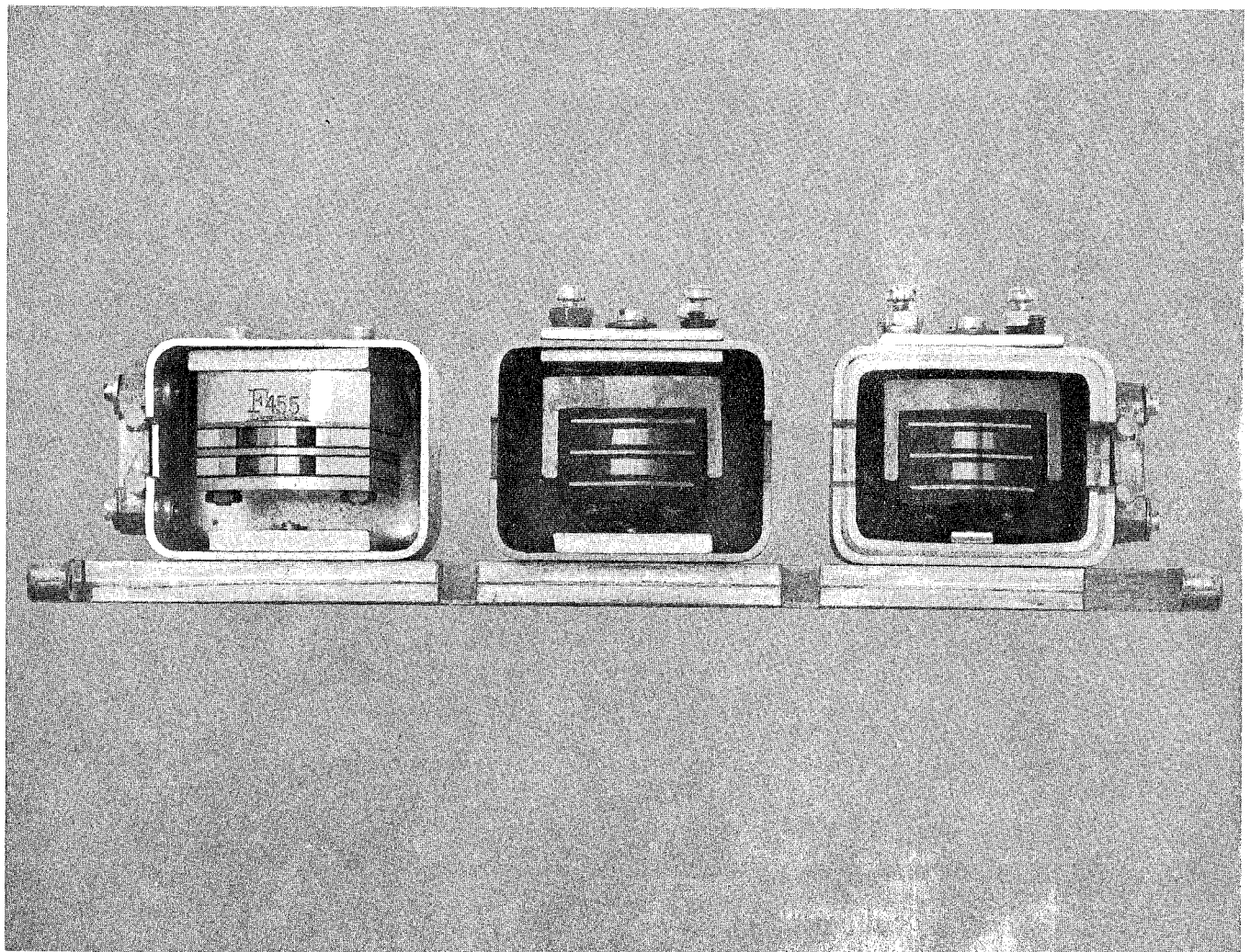
The gates should never be allowed to spring shut, but should be closed gently.

SINGLE TRACK HEAD ASSEMBLIES

Single track head assemblies offered for use in the 351 equipment are half track or full track configurations. The half track operation is constructed to allow only a portion of the tape to be erased, recorded or reproduced. Full track operation allows the entire width of the tape to be utilized (see chart for information on head configuration and Ampex Catalog Numbers).

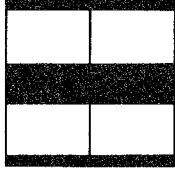
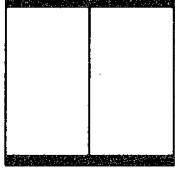

DUAL TRACK HEAD ASSEMBLIES

The dual track head assembly is constructed for two track erase (separate erase) operation,



Two-track head assembly

MODEL ERASE HEAD HEAD CONFIGURATION AMPEX CATALOG NUMBER

351-2 STEREO	2-TRACK	 <p>1/4-INCH TAPE</p> <p><i>REC 4040437-01</i> <i>P/B -02</i> <i>ERASE 4040426-01</i></p>	02-30028-02
351	FULL TRACK	 <p>1/4-INCH TAPE</p>	02-0475-18
351	HALF TRACK	 <p>1/4-INCH TAPE</p>	02-0475-17

NOTE:

ERASE, RECORD AND PLAYBACK ALL UTILIZE THE SAME CONFIGURATION

Standard 351 head configurations

utilizing 1/4-inch magnetic tape (see chart for information on head configuration and Ampex Catalog Numbers).

INDIVIDUAL REPLACEABLE HEAD PARTS

<i>Part Description</i>	<i>Ampex Part Number</i>
Gate spring, two required	27-0166-01
Gate pin, two required	16-0113
Glass rod, tape guide, 1/2-inch long, four required	21-0190-00
Gate Assembly (1/4-inch tape)	03-0110-00
Housing (1/4-inch tape)	29-0288-01
Screw, cover	40-0373
Screw, alignment	40-0377
Nut	42-0113