

Section 7

THE HEAD ASSEMBLY

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 induces 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 wavelengths of light. In typical playback heads, the gap is .00025 inch, which indicates the precision required in building 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 economical operation at the lowest cost per operating hours.

A portion of the section following will describe briefly by photography the type

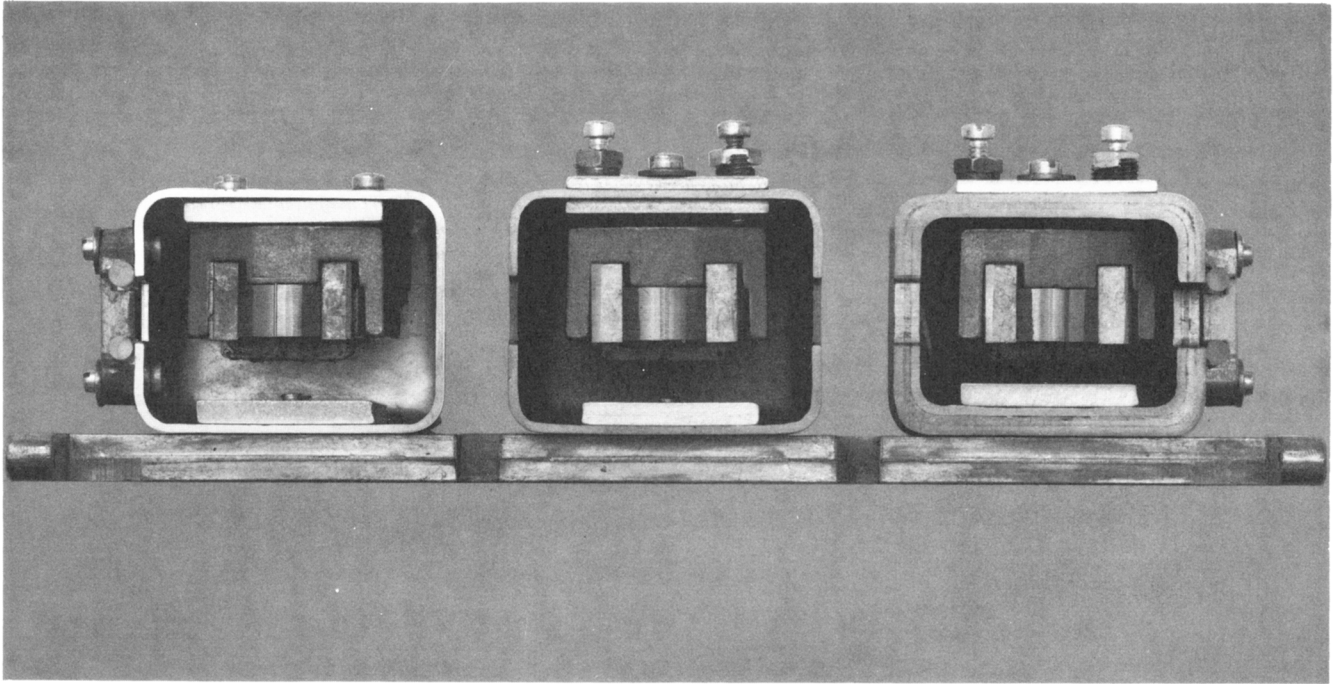
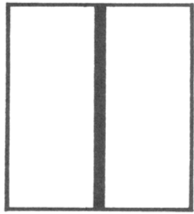
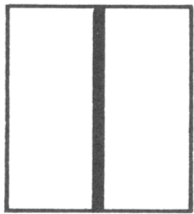
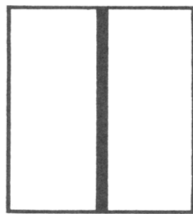


Fig. 7-1 FULL-TRACK HEAD ASSEMBLY

HEAD CONFIGURATION

 <p>ERASE</p>	 <p>RECORD</p>	 <p>REPRODUCE</p>
MODEL		300 SINGLE CHANNEL
TAPE WIDTH		1/4-INCH
ERASE, RECORD, AND REPRODUCE HEADS		FULL TRACK
AMPEX CATALOG NUMBER		475-01 AND 475-02

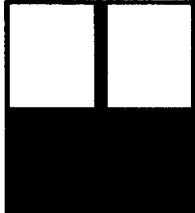


NOTE:

1. HEAD ASSEMBLIES 475-01 AND 475-02 HAVE THE SAME HEAD CONFIGURATION BUT CABLE LENGTHS ARE DIFFERENT.

475-01 (27 INCHES)
475-02 (54 INCHES)

Fig. 7-2 INFORMATION ON FULL-TRACK HEAD

HEAD CONFIGURATION

		
ERASE	RECORD	REPRODUCE
MODEL	300 SINGLE CHANNEL	
TAPE WIDTH	1/4-INCH	
ERASE, RECORD, AND REPRODUCE HEADS	HALF TRACK	
AMPEX CATALOG NUMBER	475-10 AND 475-11	

NOTE:

1. HEAD ASSEMBLIES 475-10 AND 475-11 HAVE THE SAME HEAD CONFIGURATION BUT CABLE LENGTHS ARE DIFFERENT.

475-10 (27 INCHES)

475-11 (54 INCHES)

Fig. 7-3 INFORMATION ON HALF-TRACK HEAD

head used in Ampex 300 single channel equipment and a few significant features of development and alignment.

Head assemblies of this single channel equipment may be 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 contained in a die cast housing and consists of the three heads used in the 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. 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

The single channel head assembly is constructed with full track erase, record, and reproduce operation, utilizing 1/4-inch magnetic tape. All information is provided for installing, operation and maintenance of these head assemblies in the instruction manual. See figure 7-2 for head configuration and Ampex Catalog Number.

INDIVIDUAL REPLACEABLE
HEAD PARTS

PART DESCRIPTION	AMPEX CATALOG NUMBER
Gate Spring, two required	438-01
Gate Pin, two required	403-006
Glass Rod, Tape Guide, 13/16 inches long, two required	457-00
Glass Rod, Tape Guide, 1/2 inch long, four required	1372-00
Gate Assembly	479-00
Housing	433-01
