

DESCRIPTION AND PERFORMANCE CHARACTERISTICS

GENERAL

The AMPEX Series 351 Magnetic Tape Recorder/Reproducers are high quality precision instruments designed for the professional user who requires the finest and most faithful recording and reproduction.

A basic recorder/reproducer in the 351 series consists of a tape transport for operation at tape speed pairs of $3\frac{3}{4}$ inches per second (ips) and $7\frac{1}{2}$ ips or $7\frac{1}{2}$ and 15 ips; a head assembly for use with the $\frac{1}{4}$ -inch magnetic tape; and an electronic assembly which contains the record amplifier, reproduce amplifier, bias and erase oscillator, and power supply — all featuring etched board construction.

NOTE

This manual is primarily intended for recorders using Ampex Catalog Number 30960 electronics. In instances where there are significant differences between this electronics assembly and earlier models using Catalog Number 30750 or 30950 electronics an appropriate notation will be found.

Head assemblies for either full (single) track, half track or two track stereophonic (351-2) operation are available.

CCIR equalization can be obtained on request

when ordering equipment.

Several mounting arrangements are offered—console, two case portable, and rack mount.

In the portable equipment, one case contains the tape transport and the other houses the electronic assembly.

PERFORMANCE CHARACTERISTICS

Tape Width 1/4-inch

Tape Speed Pairs 3 3/4-7 1/2 ips
7 1/2-15 ips

<i>Frequency Response</i>	<i>Speed (ips)</i>	<i>Response (Cycles per second)</i>
	3 3/4	±2 db 50 to 7,500
	7 1/2	±2 db 40 to 10,000
	15	±4 db 30 to 15,000 ±2 db 30 to 15,000

<i>Signal-to-Noise Ratio</i>	<i>Speed (ips)</i>	<i>Peak Record Level to Unweighted Noise (db)</i>
	3 3/4	50
	7 1/2	60 full track
	15	55 half track or two track Same as 7 1/2 ips

Peak record level is that level at which the overall (input to output) total rms harmonic distortion does not exceed 3 percent when measured on a 400 cycle tone. Noise is measured when erasing a signal of peak recording level in the absence of new signal. Bias, erase and reproduce amplifier noise are included in the measurement. All frequencies between 50 and 15,000 cycles are measured.

<i>Flutter and Wow</i>	<i>Speed (ips)</i>	<i>Flutter and Wow (percentage rms)</i>
	3 3/4	.25%
	7 1/2	.2 %
	15	.15%

Flutter and wow measurements include all components between 0 and 300 cycles using an rms value of constant amplitude sine wave flutter.

<i>Recording or Reproducing Time (NAB 10 1/2 Inch Diameter Reels, 2400 feet of tape)</i>	<i>Speed (ips)</i>	<i>Half Track</i>		<i>Full Track</i>		
		<i>(hrs)</i>	<i>(min)</i>	<i>(hrs)</i>	<i>(min)</i>	
		3 3/4	4	16	2	8
		7 1/2	2	8	1	4
	15	1	4		32	

Starting Time The tape is accelerated to full speed in less than 1/10 of a second.

Stopping Time When operating at 15 ips, the tape moves less than two inches after the STOP button is pressed.

<i>Reproduce Timing Accuracy</i>	<i>Accuracy (percentage)</i>	<i>Accuracy (second)</i>	<i>Length of Recording (min)</i>
	±.2%	±3.6	30

Rewind Time Approximately 1 minute for a full 2,400 foot NAB reel.

Controls

Tape Motion All tape motion is controlled by four pushbuttons, PLAY, STOP, FAST FORWARD and REWIND.

Record Control A separate RECORD button on the face of the electronic assembly, when pressed, energizes the record relay which drops out when the STOP button is pressed. The stereophonic function (two track) is controlled by pressing the RECORD buttons on both electronic assemblies simultaneously. In two track operation, for consistency, the master electronic assembly is usually connected to the upper track in the head assembly so that, when the RECORD button on the master (only) is pressed, recording takes place on the upper track.

Tape Speed Tape speed can be changed by the TAPE SPEED switch. LOW or HIGH positions are used to select drive motor windings.

Equalization An EQUALIZATION switch on the face of the electronic assembly provides a means for selecting LOW or HIGH speed equalization appropriate to the tape speed used.

Reel Size A REEL SIZE toggle switch on the tape transport makes possible selection of the proper tape tensioning for the NAB 10½ inch diameter reel or the EIA 5 inch and 7 inch reels.

Record Inputs The INPUT TRANSFER SWITCH provides a means for selecting three different types of inputs:

Input

	<i>Input Impedance</i>	<i>Minimum Input Signal that will produce Operating Level (1% tape characteristic distortion)</i>
MICROPHONE	150 and 250 ohms nominal (transformer can be strapped for 30-50 ohms nominal.)	150 microvolts
BAL BRIDGE	200K ohms	-10 dbm
UNBAL BRIDGE	100K ohms	-10 dbm

Reproduce Output Zero indication on the v-u meter corresponds to +8 dbm (± 1 db). Sufficient gain and power handling capabilities exist to feed a +14 vu line output into 600 ohms balanced or unbalanced. The center tap of the output transformer can be strapped to ground for balanced output. Plus 4 vu also can be obtained by strapping. (See INSTALLATION).

Head Housing The erase, record, and reproduce heads are contained in a single head housing (See SECTION 6 on HEAD ASSEMBLIES).

Monitoring (aural and visual) The signal on the tape can be monitored while the equipment is recording. Two phone jacks are available to allow monitoring the record input signal, or the output signal from the reproduce head. A switch provides a means for making direct comparison between the original program and the recorded program. The same switch transfers a 4 inch vu meter for level comparison and visual monitoring. The vu meter also is used to indicate bias and erase current.

Power Requirements

The half track and single track equipment requires 2.0 amperes at 117 volts ac and is available for 50 or 60 cycle line frequency. Two track equipment requires 2.5 amperes at 117 volts ac, 50 or 60 cycles.

When the Ampex Model 375 Precision Frequency 60 cycle amplifier is used with the equipment, power requirements are greater by 2.5 amperes: single track equipment 4.5 amperes; dual track 5.0 amperes.

EQUIPMENT AVAILABLE

<i>Dimensions and Weight (in.) (lb.)</i>	<i>Item</i>	<i>Height</i>	<i>Depth</i>	<i>Width</i>	<i>Weight</i>
<i>Rack Mount</i>	Tape Transport	15¾ (rack space)	8 (behind rack)	19	50
	Electronic Assembly	7 (rack space)	8½ (behind rack)	19	18
<i>Console</i>	Console	48 (max)	28½ (max)	24½	155
<i>Two Case Portable</i>	Tape Transport Case (Equipment in Case)	15½	17	20¼	69
	Electronic Ass'y. Case (Equipment in Case)	9	13	21	38
	Two Track Stereophonic Electronic Ass'y. Case (Equipment in Case)	16½	13	21	80

Remote Control

Part Numbers for Remote Control units are located in the Electronic Section Parts List.

INSTALLATION

NOTE

Before operating the equipment read this SECTION AND SECTION 3, OPERATION.

GENERAL

The 351 Series equipment is shipped mounted in consoles or portable cases after a thorough inspection and performance check at the factory. In the event that the equipment is requested disassembled, for customer rack mounting, all assembly hardware is provided.

INTERCONNECTING

See the appropriate interconnecting diagrams at the back of this section.

MOUNTING

Console Models

To assemble the console model proceed as follows:

- Step 1:* Install the tape transport in the cabinet frame, securing the 8 oval-head screws and finishing washers.
- Step 2:* Place the two springs in the holes for the electronic assembly cabinet frame.
- Step 3:* Attach the two rails to the electronic assembly using the number 8 screws.
- Step 4:* Slide the cabinet back panel up and out to allow connecting of the a-c power cable and plug the input cable and the output cable into their receptacles on the back of the electronic



Ampex Series 351 Recorder/Reproducer—3/4 View

backs of each case. To set up the equipment follow these steps:

- Step 1:* Arrange the cases so that the mechanical assembly case is to the right of the electronic assembly case.
- Step 2:* Unlatch and remove the top cover and the side access door on the mechanical assembly case.
- Step 3:* Unlatch and remove the front and rear covers on the electronic assembly case.
- Step 4:* Uncoil the interconnecting cables from behind the cable access door on the tape transport case and plug them into mating receptacles at the rear of the electronic assembly.
- Step 5:* Connect the a-c power, and the input and output to the rear of the electronic assembly.

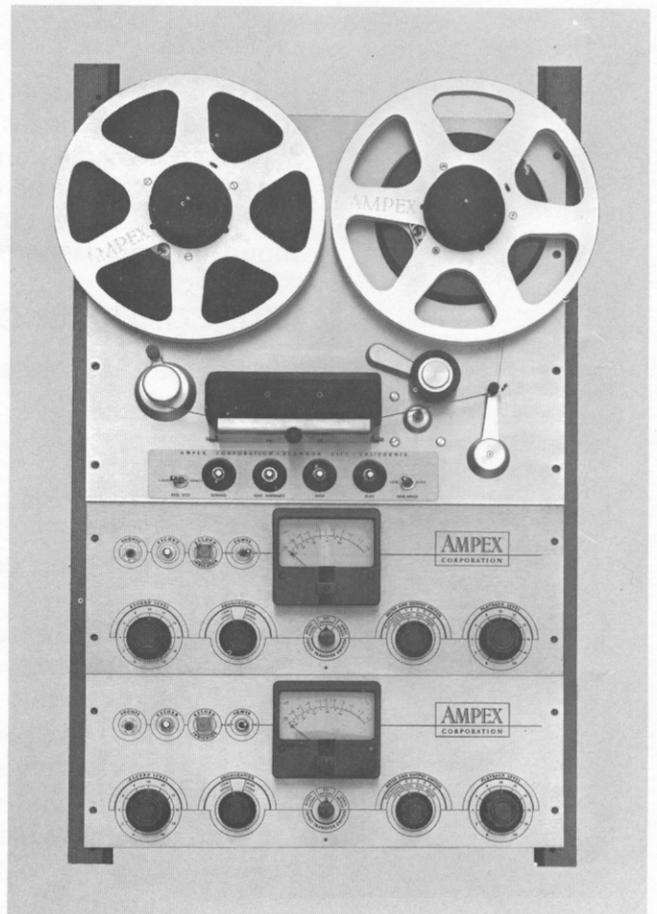
assembly.

- Step 5:* Install the electronic assembly, tightening the four knurled nuts to fasten it to the frame.
- Step 6:* Connect the captive head cables at their locations on the electronic assembly.
- Step 7:* Connect the captive CABLE TO ELECTRONICS to the electronic assembly.
- Step 8:* Replace the back panel, making certain that all cables run freely through the semi-circular cut-outs at the bottom of the sliding panel.

Two Case Portable Models

(For 351-2 see the applicable INTERCONNECTING illustration at the back of this SECTION).

The two case portable models are shipped in a ready to operate condition, except for the connection of interconnecting cables. Convenient rubber feet are located at both ends of each case, and metal rests are provided on the



Rack layout (Model 351-2)

Rack Mounted Models

Mount these versions of the equipment on a standard 19-inch relay rack with the mechanical assembly above the main electronic panel.

POWER CONNECTION

Connect the power cable from the a-c POWER input connector, J8, on the electronic assembly to a convenient 115 volt a-c power source.

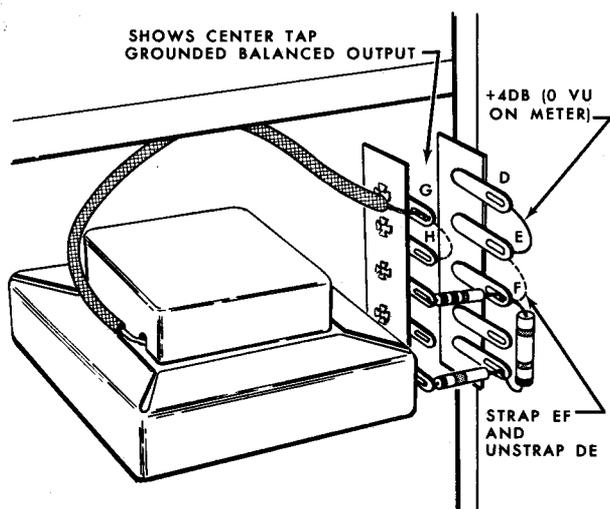
OUTPUT

A mating connector for LINE OUTPUT is supplied. The user must fabricate his own cables, using the connectors supplied with the recorder.

Studio Line

Plus 8 v-u, 600 ohm line output, balanced or unbalanced, is available across terminals 2 and 3 of the line out connector, J5. Pin 1 is the chassis ground.

If unbalanced output is desired, wire the mating connector so that the pin 2 side of the line is tied to ground or tie A to B at TS1. Supply 600 ohm termination to this output at all times to maintain correct meter calibration while recording or reproducing. If the output is not feeding a terminated line, or if the output is not connected, such as on remote pickups, the line out termination switch, S4, must be left in the ON position.



Center tap grounded balanced output and strapping for 4VU output.

To obtain a center tap, grounded balanced output, strap the black lead of transformer T3 to ground at the tie point shown in the illustration.

Plus 4 v-u output can be achieved by unstrapping D and E at transformer T3 and strapping E to F. Readjust the record calibration according to instructions in SECTION 7 ALIGNMENT AND PERFORMANCE CHECKS.

High Impedance Amplifier Input

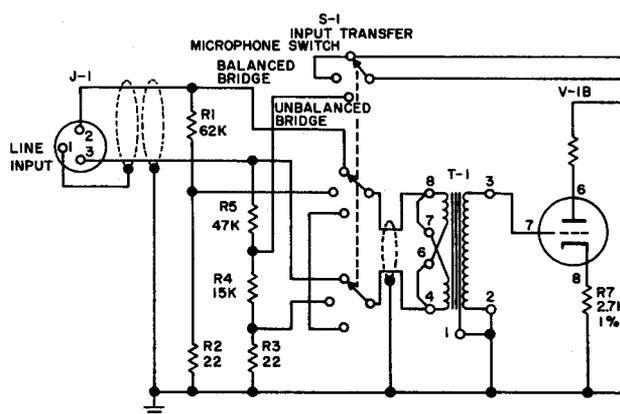
Wire the mating connector so that pin 3 of the line out connector, J5 is connected to the high side of the amplifier input. Strap pins 1 and 2 of the mating connector for connection to the ground side of the amplifier input. The line out termination switch S4, must be left in the ON position at all times.

INPUT

During this discussion refer to the foldout illustration — Schematic Diagram-Electronic Assemblies at the back of SECTION 7.

Microphone Input

Any low impedance microphone having a nominal impedance between 30 and 250 ohms can be plugged directly into the equipment. Wire the mating connector so that the microphone is connected to pins 2 and 3 of LINE INPUT, J1. The cable shield must be connected to pin 1. Place the input transfer switch, S1, in the MIC position.



Microphones with 50 ohms or less impedance.

SUMMARY

For Gain Increase	Component	New Value	New Input Impedance	
			BAL BRIDGE	UNBAL BRIDGE
10 db BAL BRIDGE and UNBAL BRIDGE	R1	33K ohms	66K ohms	30K ohms
	R5	12K ohms		
14 db UNBAL BRIDGE	R5	zero (short out)	200K ohms	50K ohms
	R4	100K ohms		
10 db BAL BRIDGE	R1	33K ohms	66K ohms	33K ohms
	R5	27K ohms		
	R4	5.6K ohms		

PHONES

High impedance head phones must be used. To monitor the incoming line or reproduce output, plug the high impedance phones into phone jack J6 PHONES on the amplifier face panel or J4 MONITOR on the back of the amplifier chassis. The monitor jack J4 is a high impedance unbalanced output isolated from the main line. To preserve low frequency response, feed into an input impedance 50K or higher. To preserve high frequency response the cable should have not over 500 uuf of capacitance.

REMOTE CONTROL

The operation of the tape transport mechanism can be remotely controlled by a Remote Control Unit. The catalog No. 5763-00 or 5763-02 unit is supplied in a wooden case, completely wired and ready to plug into the remote control connector, J502S, on the tape transport circuits assembly. The catalog No. 5763-01 and 5763-03 units are mounted on a flat plate for installation in studio consoles, and are not wired. For Model 351-2, use 5763-02 in the wooden case or 5763-03 mounted on the flat plate. To install, wire as shown in the figure (Schematic Diagram, Remote Control Unit) located in SECTION 5, and plug into J502S.

NOTE

Whenever the remote control unit is not connected, the dummy plug P502P, supplied with the equipment, must be plugged into J502S.

60 CYCLE AMPLIFIER

The Ampex Model 375 Precision 60 Cycle

Amplifier can be plugged directly into the equipment at J503S. No other connections are necessary. The Model 375 is used where power sources are erratic and there is need for a precision 60 cycle time base for driving the capstan.

CAUTION

If this unit is used with the Recorder/Reproducer, the control circuit fuse F402 must be increased to 5 amperes.

NOTE

Do not remove the dummy plug P503P unless the 60 cycles amplifier is connected.

OVERALL PERFORMANCE CHECK

(Read SECTION 3, OPERATION before making these checks.)

Make the following equipment performance checks at the time of installation and when necessary thereafter:

- REPRODUCE (Playback) LEVEL
- REPRODUCE (Playback) RESPONSE
- REPRODUCE (Playback) NOISE MEASUREMENT
- RECORD CALIBRATION
- FREQUENCY RESPONSE
- RECORD NOISE MEASUREMENT

NOTE

It should be noted that this machine has been adjusted at the factory to

produce frequency response within specifications when recording on an average tape. In the last few years the high frequency output from tape has improved tremendously. In order to keep pace with these improvements, in the summer of 1959 Ampex selected a new "average" tape to adjust bias and record equalization. Machines adjusted to the new average tape may be identified by the catalog number of the electronics, No. 30960 representing the revised machine. The 30960 electronics also are adjusted for a 3¾ inches per second (ips) playback response curve incorporating a 120 microsecond turnover.

Complete instructions for making the above checks are given in SECTION 7 ALIGNMENT AND PERFORMANCE CHECKS.

DISTORTION

Overall distortion can be measured by connecting any standard distortion measurement apparatus across the output. The readings from a wave analyzer or selective frequency distor-

tion meter will be more accurate than those from a null type instrument at lower distortion levels. Distortion readings are somewhat dependent on tape. A reading of 1% is normal at operating level while a reading of 3% is normal at 6 db above operating level. Second harmonic distortion is negligible; measured distortion is predominately third order.

FLUTTER AND WOW

Flutter and wow are produced by periodic irregularities in tape speed and appear as cyclic frequency deviations in recording or reproduction. They can be measured by means of any standard flutter bridge. Variations in amplitude as indicated on level measurements do not constitute flutter and are entirely due to tape coating variations. Readings will be near or below .15% rms at 15 inch, .2% rms at 7½ inch, and .25% rms at 3¾ inch speed. The Ampex Professional Products Division primary standard of measurements is based on the use of a flutter meter calibrated to indicate the deviation from mean carrier frequency of any rate between .5 and 300 cps expressed in percent rms. Flutter and wow checks should be made at the peak record level or higher.

INTERCONNECTING SINGLE TRACK

Cable	Catalog Number	Qty.	Receptacle	From Chassis	To Receptacle	Chassis
A-c	2413-00	(1)	J8 POWER	Electronic Assembly	A-c source	
Power Interconnecting		(1)	J7 TAPE TRANSPORT	Electronic Assembly	CABLE TO ELECTRONICS	Captive at Tape Transport
Reproduce Head		(1)	J3 PLAYBACK HEAD	Electronic Assembly	Captive at Tape Transport	
Record Head		(1)	J2 RECORD HEAD	Electronic Assembly	Captive at Tape Transport	
Erase Head		(1)	J10 ERASE HEAD	Electronic Assembly	Captive at Tape Transport	

PORTABLE SINGLE TRACK

Power Extension	3768-01	(1)	J7 TAPE TRANSPORT	Electronic Assembly	End of Captive Tape Transport power interconnecting cable.	
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DUAL TRACK EQUIPMENT (Unmounted)

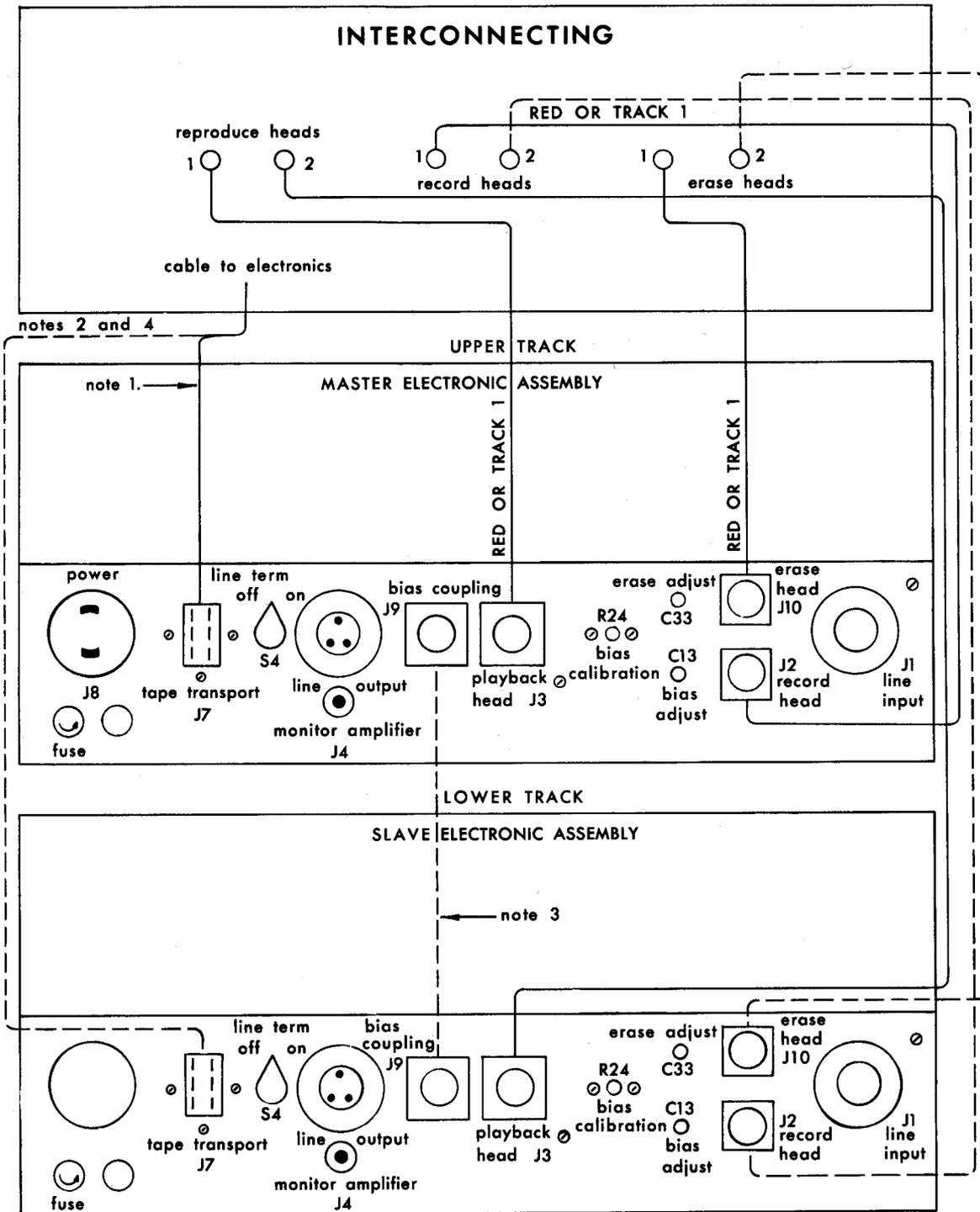
Power Interconnecting	30926-01	(1)	J7 TAPE TRANSPORT	Electronic Assembly 1 and 2	End of Captive Tape Transport power interconnecting cable.	
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			From Receptacle	Chassis	To Receptacle	Chassis
Bias Interconnecting	14943-02	(1)	J9 BIAS COUPLING	Master Electronic Assembly	J9 BIAS COUPLING	Slave Electronic Assembly

DUAL TRACK EQUIPMENT (Portable)

	30926-02		J7 TAPE TRANSPORT	Electronic Assembly 1 and 2	End of Captive Tape Transport power interconnecting cable.	
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NOTE: Cables marked with a red band, interconnect in upper electronics for the Model 351-2 only.



NOTES:

1. A 3768-01 POWER EXTENSION CABLE IS USED WITH SINGLE TRACK PORTABLE EQUIPMENT.
2. 30926-01 INTERCONNECTING CABLE IS USED WITH DUAL TRACK STEREPHONIC EQUIPMENT.
3. A 14943-02 BIAS INTERCONNECTING CABLE IS USED WITH PORTABLE DUAL TRACK STEREPHONIC EQUIPMENT.
4. A 30812-02 POWER INTERCONNECTING CABLE IS USED WITH PORTABLE DUAL TRACK STEREPHONIC EQUIPMENT.



Model 351 Console

REF. NO.

PART DESCRIPTION

AMPEX PART NO.

TAPE TRANSPORT MECHANISM

B501	DRIVE MOTOR ASSEMBLY	
	7-1/2 - 15 ips, 60 cycle motor	31210-01
	7-1/2 - 15 ips, 50 cycle motor	31210-02
	3-3/4 - 7-1/2 ips, 60 cycle motor	31210-04
	3-3/4 - 7-1/2 ips, 50 cycle motor	31210-03
	Each includes:	
C501	Capacitor	9487-02
	Flywheel - Bodine motor	981
	Ashland motor	2212
	Set screw, 10-32 x 1/4	477-118
	Plug, 6-contact, Jones	145-012
	FAN	
B502	TAKEUP ASSEMBLY	9451-03
	(Alternate)	9451-04
	Turntable Motor Assembly	7558
	includes motor, mounting flange, brake drum and turntable with pad,	
	Turntable	61462-01
	Pad	958-00
C512	Capacitor 3.75 mfd (60 cycle)	035-111
	Brake Assembly, complete	17327-01
	Brake Housing	17614-01
	Brake Band	17612-01
	Brake Band Leaf, 1-1/8" long	61460-01
	Brake Tension Spring long	322-01
	Brake Tension Spring short	17323-00
	Eye Bolt	396-06
	Crosshead	17324-01
	Anchor	17322-01
	Spacer	406-031
	Roll Pin - 1/8 inch x 3/4 inch	406-031
	Screw, Socket head cpa stl. cad. pl.	470-008
	Brake Band Link	330-00
	Brake Band Clamp	331-00
	Brake Lever	332-00
	Drivelock Pin - 1/8 inch x 1/2 inch	403-008
	Cotter - 1/16 inch x 1/2 inch	401-005
	Clevis Pin - 1/8 inch x 9/32 inch	400-002
	Plug, 8-contact, Jones	17313-01
K505-K506	Brake Solenoid	337
B503	REWIND ASSEMBLY (60 cycle)	9452-03, 04
	(50 cycle)	9452-05
	Turntable Motor Assembly	
	includes motor, mounting flange, brake drum and turntable with pad.	
	Turntable	61462-01
	Pad	958-00
C513	Capacitor 3.75 mfd. (60 cycle)	035-111
	Capacitor 5 mfd. (50 cycle)	035-117

REF. NO.	PART DESCRIPTION	AMPEX PART NO.
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TOGGLE SWITCHES

	Tape Speed (DPST)	120-004
	Reel Size (SPST) LG Shank	120-005
	TOP PLATE CONTROL BOX ASSEMBLY	5700-03
	Individually replaceable parts:	
	Chassis cover	5739-01
P502P	Connector, Plug: Male 10 contacts (Remote Dummy)	3461-00
P503P	Connector, Plug: Male 8 contacts (60 Cycle Dummy)	567-01

ORDER BY AMPEX CATALOG NUMBER

CONTROL CIRCUIT ASSEMBLY

Catalog No. 5703-03

C502	CAPACITOR, fixed: electrolytic tubular, 150 uf, 150 vdcw; Cornel Dubilier Part No. 15015	031-045
C503	CAPACITOR, fixed: metallized tubular, axial leads, .05 uf, ±20%, 400 vdcw; Astron Part No. ML-4-05	033-006
C504	CAPACITOR, fixed: metallized tubular, axial leads, .25 uf, ±20%, 400 vdcw; Astron Part No. ML-4-25	033-008
C505	Same as C503	033-006
C506	Same as C503	033-006
C507	CAPACITOR, fixed: metallized tubular, axial leads, .01 uf, ±20%, 400 vdcw; Astron Part No. ML-4-01	033-005
C508	Same as C507	033-005
C509	Same as C503	033-006
C510	Same as C503	033-006
C511	Same as C503	033-006
J501S	CONNECTOR, receptacle: female, 21 contacts chassis mounted; Jones Part No. S-321-AB	146-057
J502S	CONNECTOR, receptacle: female, 10 contacts chassis mounted; Jones Part No. S-310-AB	146-018
J503S	CONNECTOR, receptacle: female, 8 contact chassis mounted; Jones Part No. S-308-AB	146-003
J504S	CONNECTOR, receptacle: female, 6 contact chassis mounted; Jones Part No. S-306-AB	146-004
J505S	Same as J503S	146-003
J506S	Same as J503S	146-003
K502	RELAY, PLAY: 3PDT, 115 volt dc coil std. 10 amp contact; Philtrol Part No. 33QA	020-006
K503	RELAY, FAST FWD: Same as K502	020-006
K504	RELAY, REWIND: Same as K502	020-006
P501P	CONNECTOR, plug, male, 21 contacts; Jones Part No. P-321-CCT-L	145-022
P504P	CONNECTOR, plug, male, 6 contacts; Jones Part No. P-306-CCT-L	145-012
P505P	CONNECTOR, plug, male, 8 contacts; Jones Part No. P-308-CCT-L	145-013
P506P	Same as P505P	145-013
P507P	Same as P504P	145-012

REF. NO.	PART DESCRIPTION	AMPEX PART NO.
R501	RESISTOR, fixed: wirewound, 20 ohm $\pm 10\%$, 5 watts; Tru-Ohm Part No. type FRL-5	043-154
R502	RESISTOR, fixed: wirewound, 75 ohm $\pm 5\%$, 75 watts; Tru-Ohm Part No. FR-50	043-002
R503	RESISTOR, adjustable: wirewound, 150 ohm $\pm 5\%$, 50 watts; Tru-Ohm Part No. AR-50	040-011
R504	RESISTOR, adjustable: wirewound, 750 ohm $\pm 5\%$, 50 watts; Tru-Ohm Part No. AR-50	040-007
R505	Same as R503	040-011
R506	RESISTOR, fixed: composition, 100 ohm $\pm 10\%$, $\frac{1}{2}$ W; MIL-R-11A, RC20GF101K	041-038
R507	Same as R506	041-038
R508	Same as R506	041-038
R509	Same as R506	041-038
R510	Same as R506	041-038
SR501	RECTIFIER, selenium: single phase, half wave; G. E. Part No. 6RS25PH6ATD1	582-016

ELECTRONIC ASSEMBLY PARTS LIST
MODEL 351 AND 351-2
CATALOG NUMBER 30750-01 thru -08

REF. NO.	PART DESCRIPTION	AMPEX PART NO.
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351 SERIES COMPLETE EQUIPMENT

Rack Mount, 7-1/2 - 15 ips, Full Track, 60 Cycle Power		30700-01
Rack Mount, 7-1/2 - 15 ips, Full Track, 50 Cycle Power		30700-02
Rack Mount, 7-1/2 - 15 ips, Half Track, 60 Cycle Power		30700-07
Rack Mount, 7-1/2 - 15 ips, Half Track, 50 Cycle Power		30700-08
Rack Mount, 3-3/4 - 7-1/2 ips, Full Track, 60 Cycle Power		30700-13
Rack Mount, 3-3/4 - 7-1/2 ips, Full Track, 50 Cycle Power		30700-14
Rack Mount, 3-3/4 - 7-1/2 ips, Half Track, 60 Cycle Power		30700-19
Rack Mount, 3-3/4 - 7-1/2 ips, Half Track, 50 Cycle Power		30700-20
Console, 7-1/2 - 15 ips, Full Track, 60 Cycle Power		30700-03
Console, 7-1/2 - 15 ips, Full Track, 50 Cycle Power		30700-04
Console, 7-1/2 - 15 ips, Half Track, 60 Cycle Power		30700-09
Console, 7-1/2 - 15 ips, Half Track, 50 Cycle Power		30700-10
Console, 3-3/4 - 7-1/2 ips, Full Track, 60 Cycle Power		30700-15
Console, 3-3/4 - 7-1/2 ips, Full Track, 50 Cycle Power		30700-16
Console, 3-3/4 - 7-1/2 ips, Half Track, 60 Cycle Power		30700-21
Console, 3-3/4 - 7-1/2 ips, Half Track, 50 Cycle Power		30700-22
2 Case Portable, 7-1/2 - 15 ips, Full Track, 60 Cycle Power		30700-05
2 Case Portable, 7-1/2 - 15 ips, Full Track, 50 Cycle Power		30700-06
2 Case Portable, 7-1/2 - 15 ips, Half Track, 60 Cycle Power		30700-11
2 Case Portable, 7-1/2 - 15 ips, Half Track, 50 Cycle Power		30700-12
2 Case Portable, 3-3/4 - 7-1/2 ips, Full Track, 60 Cycle Power		30700-17
2 Case Portable, 3-3/4 - 7-1/2 ips, Full Track, 50 Cycle Power		30700-18
2 Case Portable, 3-3/4 - 7-1/2 ips, Half Track, 60 Cycle Power		30700-23
2 Case Portable, 3-3/4 - 7-1/2 ips, Half Track, 50 Cycle Power		30700-24

351-2 EQUIPMENT

Rack Mount, 7-1/2 - 15 ips, 60 Cycle Power		30810-01
Rack Mount, 7-1/2 - 15 ips, 50 Cycle Power		30810-02
Rack Mount, 3-3/4 - 7-1/2 ips, 60 Cycle Power		30810-05
Rack Mount, 3-3/4 - 7-1/2 ips, 50 Cycle Power		30810-06
2 Case Portable, 7-1/2 - 15 ips, 60 Cycle Power		30810-03
2 Case Portable, 7-1/2 - 15 ips, 50 Cycle Power		30810-04
2 Case Portable, 3-3/4 - 7-1/2 ips, 60 Cycle Power		30810-07
2 Case Portable, 3-3/4 - 7-1/2 ips, 50 Cycle Power		30810-08

The prefix number of the following component reference symbols designates physical location (see LEGEND) on the schematic diagram).

REF. NO.	PART DESCRIPTION	AMPEX PART NO.
1C1	CAPACITOR, fixed: paper, .15 uf ± 20%, 400 vdcw; Cornell Dublier Part No. BC4P15±20%	035-205
1C2	CAPACITOR: electrolytic -- 10 uf, 450 volt; 20 uf, 450 voltage; 10 uf, 350 volt --	30770-01
1C3	CAPACITOR, fixed: ceramic, .02 uf +80% -20%, 500 vdcw; Sprague Part No. 36C205	030-059
1C4	Same as C3	
1C5	Same as C3	
1C6	CAPACITOR, fixed: paper, .0047 uf ± 5%, 400 vdcw; Cornell Dublier Part No. ST4D47 <u>Used in 7-1/2 - 15 ips Equipment</u>	035-026
1C6	CAPACITOR, fixed: paper, .0027 uf ± 5%, 400 vdcw; Sprague Part No. 109P27254 <u>Used in 3-3/4 - 7-1/2 ips Equipment</u>	035-238
1C7	CAPACITOR, fixed: paper, .0012 uf ± 5%, 400 vdcw; Sprague Part No. 109P12254 <u>Used in 7-1/2 - 15 ips Equipment</u>	035-203
1C7	Same as C6 (.0047) <u>Used in 3-3/4 - 7-1/2 ips Equipment</u>	
1C8	CAPACITOR, fixed: paper, .02 uf ± 5%, 400 vdcw; Cornell Dublier Part No. Type PJ	035-020
1C9	Same as C3	
1C10	CAPACITOR, fixed: paper, .47 uf ± 50%, 400 vdcw; Cornell Dublier Part No. BC4P47±20%	035-206
1C11	Same as C6 (.0047) <u>Used in 7-1/2 - 15 ips Equipment</u>	
1C11	CAPACITOR, fixed: paper, .0082 uf ± 5%, 200 vdcw; Cornell Dublier Part No. 109P <u>Used in 3-3/4 - 7-1/2 ips Equipment</u>	035-030
1C12	CAPACITOR, fixed: paper, .0022 uf ± 5%, 400 vdcw; Sprague Part No. 109P22254 <u>Used in 7-1/2 - 15 ips Equipment</u>	035-204
1C12	Same as C6 (.0047) <u>Used in 3-3/4 - 7-1/2 ips Equipment</u>	
5C13	CAPACITOR, variable: mica, 15-130 uuf, 175 vdcw; El Menco Part No. 302 (type 30)	038-002
2C14	Same as C3	
2C15	CAPACITOR, fixed: mica, 750 uuf ± 5%, 500 vdcw; El Menco Part No. CM20C751J	034-144
3C16	CAPACITOR: electrolytic -- 15 uf, 350 volt; 15 uf, 350 volt; 75 uf, 450 volt; 20 uf, 450 volt--	30769-02
2C17	CAPACITOR, fixed: paper, .1 uf ± 20%, 400 vdcw; CDST4P1(20%)	035-069
2C18	Same as C3	
2C19	Same as C3	
2C20	CAPACITOR, fixed: ceramic, 150 uuf, ± 20%, 500 vdcw; Sprague Part No. 40C218	030-046
2C21	Same as C3	
2C22	CAPACITOR, fixed: ceramic, .05 uf +80% -20%, 500 vdcw; Sprague Part No. 5HK-S5	030-031
4C23	CAPACITOR, fixed: ceramic, 2 x .001 uf, 500 vdcw; Erie Part No. 812-001	030-004
5C24	CAPACITOR, fixed: ceramic, .0047 uf, ± 2%, 500 vdcw; JAN-C 20A: CC36CH470G	035-028
5C25	Same as C24	
3C26	CAPACITOR, fixed: electrolytic, 20 uf, 450 vdcw; Cornell Dublier Part No. BR10422	031-144
3C27	Same as C3	
9C28	CAPACITOR: electrolytic, 4000 uf, 15 volt	30769-01

REF. NO.	PART DESCRIPTION	AMPEX PART NO.
3C29	CAPACITOR, fixed: ceramic, .01 uf, \pm 20%, 1000 vdcw; Spargue Part No. 33C35A	030-045
3C30	Same as C29	
1C31	Same as C3	
5C32	CAPACITOR, fixed: mica, 910 uuf, \pm 5%, 500 vdcw; Cornell Dublier Part No. 5A5T91	034-145
5C33	CAPACITOR, variable: mica, 100-550 uuf, 175 vdcw; El Menco Part No. 304 Type 30	038-009
1C34	CAPACITOR, fixed: mica, 350 uuf, \pm 5%, 500 vdcw; Cornell Dublier Part No. 5A5T35	034-146
1C35	Same as C34	
1C36	CAPACITOR, fixed: mica, .001 uf \pm 5%, 500 vdcw Cornell Dublier Part No. 5AT535	034-147
4C37	CAPACITOR, fixed: ceramic, .01 uf, 500 vdcw; Erie Part No. 811-.01	030-002
5C38	CAPACITOR, electrolytic: 10 uf, 150 vdcw; Cornell Dublier Part No. BBR-10-150	031-157
5C39	CAPACITOR, fixed: mica, 33 uuf, 500 vdcw; 5%; Cornell Dublier Part No. 22A5233	034-168
6CR1	RECTIFIER, selenium: single phase, center tap, 26 volt ac rms max. in -- 1.26 amp dc max. out; General Electric Part No. 6RS5WH5	581-001
5F1	FUSE: 1/2 amp, 250 volt, slow blow; Littlefuse Part No. 313.500	070-026
5F2	FUSE: 3 amp, 250 volt, fast blow; Littlefuse Part No. 312003 <u>Master only</u>	070-001
4I1	POST LIGHT: 1/4 watt neon without internal resistor; Drake Mfg. Part No. 105	132-003
5J1	CONNECTOR, receptacle: female, 3 contact; Cannon Part No. XL-3-13	146-007
5J2	CONNECTOR, receptacle: male, 2 contact; AN3102A-10SL-4P	143-009
5J3	CONNECTOR, receptacle: male, 3 contact; AN3102A-10S-3P	143-008
5J4	PHONE JACK, open circuit type, 2 conductor; Switchcraft Part No. 11	148-015
5J5	CONNECTOR, receptacle: male, 3 contact; Cannon Part No. XL-3-14	147-004
4J6	Same as J4	
5J7	CONNECTOR, receptacle: female, 6 contact; Jones Part No. S-306-AB <u>Master only</u>	146-004
5J7	CONNECTOR, receptacle: male, 6 contact; Jones Part No. P-306-AB <u>Slave only</u>	147-011
5J8	CONNECTOR, receptacle: male, 2 contact; Hubbel Part No. 7466 <u>Master only</u>	147-013
5J9	CONNECTOR, receptacle: female, 1 contact; Amphenol Part No. 83-1R	146-067
5J10	CONNECTOR, receptacle: male, 1 contact; AN3102A-10S-2P	143-010
3K1	RELAY, record: 115v dc	30763-01

REF. NO. PART DESCRIPTION AMPEX PART NO.

1L1	CHOKES, rf: 20 mh, 125 ma	30767-01
4M1	METER, vu: frosted lamps 6.3 volt, .3 amp	30667-01
4R1	RESISTOR, fixed: composition, .15 meg, 1/2 watt; MIL-R-11A, RC20GF154K	041-074
4R2	RESISTOR, fixed: carbon, 100 ohm, 1/2 watt, 10%; MIL-R-11A, RC20GF101K	041-038
4R3	Same as R2	
4R4	RESISTOR, fixed: carbon, 33K ohm, 1/2 watt, 10%; MIL-R-11A, RC20GF333K	041-066
4R5	RESISTOR, fixed: carbon, .12 meg, 1/2 watt, 10%; MIL-R-11A, RC20GF124K	041-073
1R6	RESISTOR, fixed: film, .1 meg \pm 1%, 1/2 watt; Electra Part No. Type DC-1/2	042-092
1R7	RESISTOR, fixed: film, 2700 ohm, 1/2 watt, 10%; MIL-R-10509A, RN15R2701F	042-123
1R8	RESISTOR, fixed: composition, 1 meg, 1/2 watt; MIL-R-11A, RC20GF105K	041-031
4R9	RESISTOR, variable: composition, .1 meg, 2 watts; Allen Bradley Part No. JA1041	044-015
1R10	RESISTOR, fixed: composition, .1 meg, 1/2 watt; MIL-R-11A, RC20GF104K	041-072
1R11	RESISTOR, fixed: carbon, 4700 ohm, 1/2 watt, 10%; MIL-R-11A, RC20GF472K	041-056
4R12	RESISTOR, variable: carbon, .25 meg, 1/4 watt, 20%; Chicago Telephone Supply Part No. type PM-45	044-179
1R13	RESISTOR, fixed: carbon, 27K ohm, 1/2 watt, 10%; MIL-R-11A, RC20GF273K	041-065
1R14	RESISTOR, fixed: composition, .33 meg, 1/2 watt; MIL-R-11A, RC20GF334K	041-078
1R15	Same as R8	
1R16	RESISTOR, fixed: composition, 1500 ohm, 1/2 watt; MIL-R-11A, RC20GF152K	041-050
1R17	RESISTOR, fixed: carbon, 22K ohm, 1/2 watt, 5%; MIL-R-11A, RC20GF223J	041-016
1R18	RESISTOR, fixed: carbon, .12 meg, 1/2 watt, 5%; MIL-R-11A, RC20GF124J	041-318
1R19	RESISTOR, fixed: carbon, 22K ohm, 1 watt, 10%; MIL-R-11A, RC32GF223K124J	041-162
1R20	Same as R8	
1R21	RESISTOR, fixed: carbon, 220 ohm, 1/2 watt, 10%; MIL-R-11A, RC20GF221K	041-040
1R22	RESISTOR, fixed: carbon, 2700 ohm, 1/2 watt, 5%; MIL-R-11A, RC20GF272J	041-278
1R23	RESISTOR, fixed: carbon, 8200 ohm, 1/2 watt, 10%; MIL-R-11A, RC20GF822K	041-059
5R24	RESISTOR, variable: wirewound, 500 ohm, 2 watts, 20%; Claro Part No. 39-500	044-178
2R25	RESISTOR, fixed: carbon, .33 meg, 1/4 watt, 10%; Allen Bradley Part No. Type CB	041-325
2R26	RESISTOR, fixed: carbon, .47 meg, 1/2 watt, 10%; MIL-R-11A, RC20GF474K	041-080
2R27	RESISTOR, fixed: film, .33 meg \pm 1%, 1/2 watt; Electra Part No. Type DC-1/2	042-100
2R28	RESISTOR, fixed: film: 1500 ohm, 1/2 watt, 1%; Electra Part No. DC-1/2	042-076
2R29	RESISTOR, fixed: film, 10 meg, 1/2 watt, 10%; MIL-R-11 RC20GF106K	041-090

REF. NO.	PART DESCRIPTION	AMPEX PART NO.
2R30	RESISTOR, fixed: carbon, .30 meg, 1/2 watt, 5%; MIL-R-11A, RC20GF304J 3-3/4 - 7-1/2 ips Equipment	041-326
2R31	RESISTOR, fixed: film, 68K ohm, 1/2 watt, 1%; Electra Part No. Type DC-1/2	042-088
3R32	RESISTOR, fixed: carbon, 39K ohm, 1/2 watt, 10%; MIL-R-11A, RC20GF393K	041-067
2R33	Same as R29	
2R34	RESISTOR, fixed: carbon, .22 meg, 1/2 watt, 10%; MIL-R-11A, RC20GF224K	041-076
3R35	Same as R13	
4R36	RESISTOR, variable: carbon, .25 meg, 2 watts, 10%; Allen Bradley Part No. CA2541, SD3056	044-128
2R37	Same as R8	
2R38	Same as R16	
2R39	Same as R8	
2R40	RESISTOR, fixed: carbon, 82K ohm, 1/2 watt, 10%; MIL-R-11A, RC20GF823K	041-071
2R41	Same as R16	
2R42	Same as R34	
2R43	Same as R34	
2R44	Same as R8	
2R45	Same as R8	
2R46	RESISTOR, fixed: carbon, 1K ohm, 1/2 watt, 10%; MIL-R-11A, RC20GF102K	041-048
2R47	Same as R13	
5R48	RESISTOR, fixed: carbon, 560 ohm, 1/2 watt, 10%; MIL-R-11A, RC20GF561K	041-045
2R49	Same as R32	
6R50	RESISTOR, fixed: carbon, 1.5K ohm, 1/2 watt, 10%; MIL-R-11A, RC20GF152K	041-050
6R51	RESISTOR, fixed: carbon, 4.7K ohm, 1/2 watt, 10%; MIL-R-11A, RC20GF472J	041-013
6R52	RESISTOR, fixed: carbon, 8.2K ohm, 1/2 watt, 5%; MIL-R-11A, RC20GF822J	041-309
6R53	RESISTOR, fixed: carbon, 820 ohm, 1/2 watt, 5%; MIL-R-11A, RC20GF821J	041-317
3R54	RESISTOR, fixed: carbon, 1.5K ohm, 1 watt, 10%; MIL-R-11A, RC32GF152K	041-148
3R55	Same as R54	
3R56	Same as R2	
3R57	Same as R2	
3R58	RESISTOR, fixed: carbon, 15K ohm, 1/2 watt, 10%; MIL-R-11A, RC20GF153K	041-062
1R59	RESISTOR, fixed: carbon, 1.5K ohm, 2 watts, 10%; MIL-R-11A, RC42GF152K	041-204
3R60	RESISTOR, fixed: wirewound, 1.5 ohm, 1 watt, 10% IRC Type BW-1	043-286
1R61	Same as R11	
1R62	Same as R11	
1R63	RESISTOR, variable: carbon, 10K ohm, 044-171, 1/4 watt, 30%; Chicago Telephone Supply Part No. UPM-45 SPEC3471	044-171
1R64	RESISTOR, fixed: carbon, 8.2 ohm, 1 watt, 5%; MIL-R-11A, RC32GF825J	041-319
1R65	Same as R34	041-076
4S1	SWITCH, rotary: INPUT TRANSFER, 3 position	30760-01
4S2	SWITCH, rotary: EQUALIZATION, 2 position	30761-01

REF. NO.	PART DESCRIPTION	AMPEX PART NO.
4S3	SWITCH, rotary: METER AND OUTPUT, 4 position	30762-01
5S4	SWITCH, rotary: LINE TERM, 3P4T; Oak Part No. 59016-23	122-016
4S5	SWITCH, toggle: POWER, SPST; Carling Part No. 110-B-73	120-005
4S6	SWITCH, rotary: RECORD, pushbutton SPST, normally open; Arrow H and H Part No. 3391BSA	120-013
6T1	TRANSFORMER, microphone input	17331-01
5T2	TRANSFORMER, input Low impedance Heads Only	6299
6T3	TRANSFORMER, output	30633-01
6T4	TRANSFORMER, power	30634-01
1T5	TRANSFORMER, oscillator	30766-01
1V1	TUBE, electron: 12AX7	012-105
1V2	TUBE, electron: 12AT7	012-034
2V3	Same as V1	
2V4	Same as V1	
2V5	TUBE, electron: 12AU7	012-107
1V6	Same as V5	
3V7	TUBE, electron: 6X4	012-050
	*BOARD ASSEMBLY, power supply	30754-01
	*BOARD ASSEMBLY, record: 3-3/4 - 7-1/2 ips	30755-02
	*BOARD ASSEMBLY, record: 7-1/2 - 15 ips	30755-01
	*BOARD ASSEMBLY, reproduce: 3-3/4 - 7-1/2 ips	30756-02
	*BOARD ASSEMBLY, reproduce: 7-1/2 - 15 ips	30756-01
	FACING PANEL	5711-2
	HARNESS ASSEMBLY, master	30819-01
	HARNESS ASSEMBLY, slave	30819-02
	KNOB, large, skirted: Reproduce and Record Level Control	230-004
	KNOB, small, skirted: Equalization and Output	230-003
	KNOB, small with pointer: Input and Line Termination	230-008
	POST, fuse; F1 and F2	085-001
	SHIELD, tube, for all except V7	160-012
	SHIELD, tube; V7	160-043
	SHOCKMOUNT	350-015
	SOCKET, tube: 7 pin	150-067
	SOCKET, tube: 9 pin	30818-01

When ordering replacement parts always include the following information: Equipment Type; Equipment Serial Number; Ampex Part or Catalog Number; and Description of Part. DO NOT simply use the schematic reference number.

ELECTRONIC ASSEMBLY PARTS LIST
MODEL 351 AND 351-2
CATALOG NUMBER 30960-01 thru -04

REF. NO.	PART DESCRIPTION	AMPEX PART NO.
1C1	CAPACITOR, tubular: paper, .15 uf $\pm 20\%$, 400 vdcw; Sprague Part No. 89D15404	035-205
1C2	CAPACITOR, electrolytic -- 10 uf, 450 volt; 20 uf, 450 volt; 10 uf, 350 volt --	30770-01
1C3	CAPACITOR, fixed: ceramic, .02 uf $+80\%$ -20%, 500 vdcw; Sprague Part No. 36C205	030-059
1C4	Same as 1C3	030-059
1C5	Same as 1C3	030-059
1C7 (7 $\frac{1}{2}$ -15)	CAPACITOR, variable: ceramic, 7-45 uuf, 500 vdcw; MIL-C-81A: CV11D4-50	038-009
1C7 (3 $\frac{3}{4}$ -7 $\frac{1}{2}$)	CAPACITOR, variable: mica, 550-1600 uuf, 250 vdcw; El Menco Part No. 309	038-015
1C8	CAPACITOR, tubular: paper, .020 uf, 5%, 400 vdcw; Sprague Part No. 89P20354	035-267
1C9	Same as 1C3	030-059
1C10	CAPACITOR, fixed: paper, .47 uf $\pm 20\%$, 400 vdcw; Cornell Dubilier Part No. BC4P47 $\pm 20\%$	035-206
5C13	CAPACITOR, variable: mica, 15-130 uuf, 175 vdcw; El Menco Part No. 302 (type 30)	038-002
2C14	Same as 1C3	030-059
2C15	CAPACITOR, fixed: mica, 750 uuf $\pm 5\%$, 500 vdcw; El Menco Part No. CM20C751J	034-144
3C16	CAPACITOR, electrolytic -- 15 uf, 350 volt; 15 uf, 350 volt; 75 uf, 450 volt; 20 uf, 450 volt --	30769-02
2C17	CAPACITOR, tubular: paper, .15 uf, 20%, 400 vdcw; Sprague Part No. 89D15404	035-205
2C18	Same as 1C3	030-059
2C19	Same as 1C3	030-059
2C20	CAPACITOR, fixed: ceramic, 150 uuf, $\pm 20\%$, 500 vdcw; Sprague Part No. 40C218	030-046
2C21	Same as 1C3	030-059
2C22	CAPACITOR, ceramic: .1 mfd $+80$ -20%, 50 vdcw; Sprague Part No. 33C41	030-063

REF. NO.	PART DESCRIPTION	AMPEX PART NO.
4C23	CAPACITOR, fixed: ceramic, 2 x .001 uf, 500 vdcw; Erie Part No. 812-.001	030-004
5C24	CAPACITOR, fixed: ceramic, .0047 uf, ±2%, 500 vdcw; JAN-C 20A: CC36CH470G	035-028
5C25	Same as 5C24	035-028
3C26	CAPACITOR, fixed: electrolytic, 20 uf, 450 vdcw; Cornell Dubilier Part No. BR10422	031-144
3C27	Same as 1C3	030-059
3C28	CAPACITOR: electrolytic, 4000 uf, 15 volt	30769-01
3C29	CAPACITOR, fixed: ceramic, .01 uf, ±20%, 1000 vdcw; Sprague Part No. 33C35A	030-045
3C30	Same as 3C29	030-045
5C32	CAPACITOR, mica: .00035 uf, 1%, 500 vdcw; Cornell Dubilier Part No. 5A5T35	034-169
5C33	CAPACITOR, variable: mica, 100-550 uuf, 175vdcw; El Menco Part No. 304 (type 30)	038-009
1C34 (slave only)	CAPACITOR, mica: .00091 uf, 5%, 500 vdcw; Cornell Dubilier Part No. 5A5T91	034-145
1C35	Same as 5C32	034-169
1C36	CAPACITOR, fixed: mica, .001 uf ±5%, 500 vdcw; Cornell Dubilier Part No. 5AT535	034-147
4C37	CAPACITOR, fixed: ceramic, .01 uf, 500 vdcw; Erie Part No. 811-.01	030-002
5C39	CAPACITOR, fixed: mica, 33 uuf, 500 vdcw; 5%; Cornell Dubilier Part No. 22A5233	034-168
4C43 (slave only)	CAPACITOR, electrolytic: 10 uf, 150 vdcw; Cornell Dubilier Part No. BBR-10-150	031-157
1C46 (3 $\frac{3}{4}$ -7 $\frac{1}{2}$)	CAPACITOR, variable: mica, 780-2110 uuf, 250 vdcw; El Menco Part No. 311	038-026
1C46 (7 $\frac{1}{2}$ -15)	CAPACITOR, variable: mica, 550-1600 uuf, 250 vdcw; El Menco Part No. 309	038-015
6CR1	RECTIFIER, selenium: single phase, center tap, 26 volt ac rms max. in -- 1.26 amp dc max. out; General Electric Part No. 6RS5WH5	581-001
4CR2	RECTIFIER, selenium: single phase, halfwave, 90 volt ac rms max. in -- .025 amp dc max. out; General Electric Part No. 6RS20PH4RAD1	582-031

REF. NO.	PART DESCRIPTION	AMPEX PART NO.
5F1	FUSE: $\frac{1}{2}$ amp, 250 volt, slow blow; Littlefuse Part No. 313.500	070-026
5F2	FUSE: 3 amp, 250 volt, fast blow; Littlefuse Part No. 312003 <u>Master only</u>	070-001
4I1	POST LIGHT: 1/4 watt neon without internal resistor; Drake Mfg. Part No. 105	132-003
5J1	CONNECTOR, receptacle: female, 3 contact; Cannon Part No. XL-3-13	146-007
5J2	CONNECTOR, receptacle: male, 2 contact; AN3102A-10SL-4P	143-009
5J3	CONNECTOR, receptacle: male, 3 contact; AN3102A-10S-3P	143-008
5J4	PHONE JACK, open circuit type, 2 conductor; Switchcraft Part No. 11	148-015
5J5	CONNECTOR, receptacle: male, 3 contact; Cannon Part No. XL-3-14	147-004
4J6	Same as 5J4	148-015
5J7	CONNECTOR, receptacle: female, 6 contact; Jones Part No. S-306-AB (<u>master only</u>)	146-004
5J7	CONNECTOR, receptacle: male, 6 contact; Jones Part No. P-306-AB (<u>slave only</u>)	147-011
5J8	CONNECTOR, receptacle: male, 2 contact; Hubbel Part No. 7466 (<u>master only</u>)	147-013
5J9	CONNECTOR, receptacle: female, 1 contact; Amphenol Part No. 83-1R	146-067
5J10	CONNECTOR, receptacle: male, 1 contact; AN3102A-10S-2P	143-010
3K1	RELAY, record: 115V dc, $\frac{1}{2}$ amp max. out	30763-01
4K3	RELAY, bias coupling: 115V dc, NA, DPST; Comar Part No. C6605	020-066
4M1	METER, vu: frosted lamps 6.3 volt, .3 amp	30667-01
4R1	RESISTOR, fixed: carbon, .1 meg ohm, 10%, $\frac{1}{2}$ watt MIL-R-11-RC20GF104K	041-072
4R2	RESISTOR, fixed: carbon, 100 ohm, $\frac{1}{2}$ watt, 10%; MIL-R-11A, RC20GF101K	041-038
4R3	Same as 4R2	041-038
4R4	RESISTOR, fixed: carbon, 20K ohms, 5%, $\frac{1}{2}$ watt; MIL-R-11: RC20GF202J	041-356

REF. NO.	PART DESCRIPTION	AMPEX PART NO.
4R5	RESISTOR, fixed: carbon, 82K ohms, 10%, $\frac{1}{2}$ watt; MIL-R-11: RC20GF823K	041-071
1R6	RESISTOR, fixed: film, .1 meg $\pm 1\%$, $\frac{1}{2}$ watt; Electra Part No. Type DC- $\frac{1}{2}$	042-092
1R7	RESISTOR, fixed: film, 2700 ohms, $\frac{1}{2}$ watt, 10%; MIL-R-10509A, RN15R2701F	042-123
1R8	RESISTOR, fixed: composition, 1 meg, $\frac{1}{2}$ watt; MIL-R-11A, RC20GF105K	041-031
4R9	RESISTOR, variable: composition, .1 meg, 2 watts; Allen Bradley Part No. JA1041	044-015
1R10	RESISTOR, fixed: composition, .1 meg, $\frac{1}{2}$ watt; MIL-R-11A, RC20GF104K	041-072
1R11	RESISTOR, fixed: carbon, 3.3K ohms, 10%, $\frac{1}{2}$ watt; MIL-R-11: RC20GF332K	041-054
4R12	RESISTOR, variable: carbon, .25 meg, 1/4 watt, 20%; Chicago Telephone Supply Type PM-45	044-179
1R13	RESISTOR, fixed: carbon, 27K ohms, $\frac{1}{2}$ watt, 10%; MIL-R-11A, RC20GF273K	041-065
1R14	RESISTOR, fixed: composition, .33 meg, $\frac{1}{2}$ watt; MIL-R-11A, RC20GF334K	041-078
1R15	Same as 1R8	041-031
1R16	RESISTOR, fixed: carbon, 1500 ohms, $\frac{1}{2}$ watt; MIL-R-11A, RC20GF152K	041-050
1R17	Same as 1R11	041-054
1R18	RESISTOR, fixed: carbon, .12 meg, $\frac{1}{2}$ watt, 5%; MIL-R-11A, RC20GF124J	041-318
1R19	RESISTOR, fixed: carbon, 22K ohms, 1 watt, 10%; MIL-R-11A, RC32GF223K124J	041-162
1R20	Same as 1R8	041-031
1R21	RESISTOR, fixed: carbon, 220 ohms, $\frac{1}{2}$ watt, 10%; MIL-R-11A, RC20GF221K	041-040
1R22	RESISTOR, fixed: carbon, 2.2K ohms, 10%, $\frac{1}{2}$ watt; MIL-R-11: RC20GF222K	041-052
1R23	RESISTOR, fixed: carbon, 8200 ohms, $\frac{1}{2}$ watt, 10%; MIL-R-11A, RC20GF822K	041-059
5R24	RESISTOR, variable: wirewound, 500 ohms, 2 watts, 20%; Claro Part No. 39-500	044-178
2R25	RESISTOR, fixed: carbon, 330K ohms, 10%, $\frac{1}{4}$ watt; Allen Bradley Part No. Type CB	041-325

REF. NO.	PART DESCRIPTION	AMPEX PART NO.
2R26	RESISTOR, fixed: carbon, .47 meg ohms, 10%, $\frac{1}{2}$ watt; MIL-R-11: RC20GF474K	041-080
2R27	RESISTOR, fixed: film, .33 meg $\pm 1\%$, $\frac{1}{2}$ watt; Electra Part No. Type DC- $\frac{1}{2}$	042-100
2R28	RESISTOR, fixed: film, 1500 ohms, $\frac{1}{2}$ watt, 1%; Electra Part No. DC- $\frac{1}{2}$	042-076
2R29	RESISTOR, fixed: film, 10 meg, $\frac{1}{2}$ watt, 10%; MIL-R-11: RC20GF106K	041-090
2R30 ($3\frac{3}{4}$ - $7\frac{1}{2}$ only)	RESISTOR, variable: 500K ohms, 30%, 1/4 watt; Chicago Telephone Supply Type UPE-70 Spec. 31184	044-207
2R31	RESISTOR, variable: 100K ohms, 20%, 1/4 watt; Chicago Telephone Supply Type UPE-70 Spec. 31186	044-204
3R32	RESISTOR, fixed: carbon, 39K ohms, $\frac{1}{2}$ watt, 10%; MIL-R-11A, RC20GF393K	041-067
2R33	Same as 2R29	041-090
2R34	RESISTOR, fixed: carbon, .22 meg, $\frac{1}{2}$ watt, 10%; MIL-R-11A, RC20GF224K	041-076
3R35	Same as 1R13	041-065
4R36	RESISTOR, variable: carbon, .25 meg, 2 watts, 10%; Allen Bradley Part No. CA2541, SD3056	044-128
2R37	Same as 1R8	041-031
2R38	Same as 1R16	041-050
2R39	Same as 1R8	041-031
2R40	RESISTOR, fixed: carbon, 82K ohms, $\frac{1}{2}$ watt, 10%; MIL-R-11A, RC20GF823K	041-071
2R41	Same as 1R16	041-050
2R42	Same as 2R34	041-076
2R43	Same as 2R34	041-076
2R44	Same as 1R8	041-031
2R45	Same as 1R8	041-031
2R46	RESISTOR, fixed: carbon, 1K ohm, $\frac{1}{2}$ watt, 10%; MIL-R-11A, RC20GF102K	041-048
2R47	RESISTOR, fixed: carbon, 15K ohms, 10%, $\frac{1}{2}$ watt; MIL-R-11: RC20GF153K	041-062
5R48	RESISTOR, fixed: carbon, 560 ohms, $\frac{1}{2}$ watt, 10%; MIL-R-11A, RC20GF561K	041-045

REF. NO.	PART DESCRIPTION	AMPEX PART NO.
2R49	RESISTOR, fixed: carbon, 39K ohms, 10%, $\frac{1}{2}$ watt; MIL-R-11: RC20GF393K	041-067
6R50	RESISTOR, fixed: carbon, 1.5K ohm, $\frac{1}{2}$ watt, 10%; MIL-R-11A, RC20GF152K	041-050
6R51	RESISTOR, fixed: carbon, 4.7K ohms, $\frac{1}{2}$ watt, 10%; MIL-R-11A, RC20GF472J	041-013
6R52	RESISTOR, fixed: carbon, 8.2K ohms, $\frac{1}{2}$ watt, 5%; MIL-R-11A, RC20GF822J	041-309
6R53	RESISTOR, fixed: carbon, 820ohms, $\frac{1}{2}$ watt, 5%; MIL-R-11A, RC20GF821J	041-317
3R54	RESISTOR, fixed: carbon, 1.5K ohm, 1 watt, 10%; MIL-R-11A, RC32GF152K	041-148
3R55	Same as 3R54	041-148
3R56	Same as 4R2	041-038
3R57	Same as 4R2	041-038
3R58	RESISTOR, fixed: carbon, 15K ohms, $\frac{1}{2}$ watt, 10%; MIL-R-11A, RC20GF153K	041-062
1R59	RESISTOR, fixed: carbon, 1.5K ohm, 2 watts, 10%; MIL-R-11A, RC42GF152K	041-204
3R60	RESISTOR, fixed: wirewound, 1.5 ohm, 1 watt, 10%; International Resistance Corp. Type BW-1	043-286
1R61	Same as 1R11	041-054
1R62	Same as 1R61	041-054
1R63	RESISTOR, variable: carbon, 10K ohms, 1/4 watt, 30%; Chicago Telephone Supply Part No. UPM-45, Spec. 3471	044-171
1R64	RESISTOR, fixed: carbon, 8.2 ohms, 1 watt, 5%; MIL-R-11A, RC32GF825J	041-319
1R65	Same as 2R34	041-076
4R70	RESISTOR, fixed: carbon, 330 ohms, 10%, $\frac{1}{2}$ watt; MIL-R-11: RC20GF331K (Slave only)	041-042
2R75	RESISTOR, fixed: carbon 680K ohms, 10%, $\frac{1}{2}$ watt; MIL-R-11: RC20GF684K	041-082
4S1	SWITCH, rotary: INPUT TRANSFER, 3 position	30760-01
4S2	SWITCH, rotary: EQUALIZATION, 2 position	30761-01
4S3	SWITCH, rotary: METER AND OUTPUT, 4 position	30762-01
5S4	SWITCH, rotary: LINE TERM, 3P4T; Oak Part No. 59016-23	122-016

REF. NO.	PART DESCRIPTION	AMPEX PART NO.
4S5	SWITCH, toggle: POWER, SPST; Carling Part no. 110-B-73	120-005
4S6	SWITCH, rotary: RECORD, pushbutton SPST, normally open; Arrow H & H Part 3391BSA	120-013
6T1	TRANSFORMER, microphone input	17331-01
5T2	TRANSFORMER, input (Low impedance heads only)	6299
6T3	TRANSFORMER, output	30633-01
6T4	TRANSFORMER, power	30634-01
1T5	TRANSFORMER, oscillator	30766-01
1V1	TUBE, electron: 12AX7, 9 pin, miniature, Telefunken Part Number	012-024
1V2	TUBE, electron: 12AT7	012-034
2V3	Same as 1V1	012-024
2V4	Same as 1V1	012-024
2V5	TUBE, electron: 12AU7	012-107
1V6	Same as 2V5	012-107
3V7	TUBE, electron: 6X4	012-050
	*BOARD ASSEMBLY, power supply	30754-01
	*BOARD ASSEMBLY, reproduce: $7\frac{1}{2}$ -15 ips	30962-01
	*BOARD ASSEMBLY, reproduce: $3\frac{3}{4}$ - $7\frac{1}{2}$ ips	30962-02
	*BOARD ASSEMBLY, record: $7\frac{1}{2}$ -15 ips	30963-01
	*BOARD ASSEMBLY, record: $3\frac{3}{4}$ - $7\frac{1}{2}$ ips	30963-02
	FACING PANEL	5711-02
	HARNESS ASSEMBLY, master	30966-01
	HARNESS ASSEMBLY, slave	30966-02
	HOLD-DOWN KNOB, EIA reels	30971-01
	KNOB, large, skirted	230-004
	KNOB, small, skirted	230-003
	KNOB, small, with pointers	230-008
	POST, fuse (F1 and F2)	085-001
	SHIELD, tube, for all except V7	160-012
	SHIELD, tube V7	160-043

* Etched board assemblies are complete with all mounted components including tubes.

REF. NO.	PART DESCRIPTION	AMPEX PART NO.
	SHOCKMOUNT	350-015
	SLEEVE, nut	21078-01
	SOCKET, tube, 7 pin	150-067
	SOCKET, tube, naval	30818-01
	CABINET, console	5797-00
	CABLE ASSEMBLY, power interconnecting for rack mounted equipment	30812-01
	CABLE ASSEMBLY, power interconnecting portable equipment	30812-02
	CABLE, bias interconnecting for dual track equipment	14943-02
	CABLE, extension	5795-00
	CABLE, power	2413-00
	CASE, portable, Electronic Assembly, single unit	4100-00
	CASE, portable, Electronic Assembly, dual track unit	3935-00
	CASE, tape transport	5727-00
	REEL ADAPTER	976-00
	EDITING KNOB, console and portable	1917-00
	HOLD-DOWN KNOB, reel, for rack	9093-00
	REMOTE CONTROL UNIT, single track, complete with 30 foot cable	5763-00
	Remote Control Unit Parts	
J701P	CONNECTOR, receptacle: male, 10 contact; Jones Part No. P-310-AB	147-014
	CONNECTOR, plug: female, 3 contact, output connector; Cannon Part No. XL-3-11	144-003
	CONNECTOR, plug: male, 3 contact, line IN on microphone connector; Cannon Part No. XL-3-12	145-009
A702	LAMP, REMOTE TAPE MOTION:	
	Same as A701	060-006
	LAMP BASE, green	132-007
	LAMP BASE, red	132-006

REF. NO.	PART DESCRIPTION	AMPEX PART NO.
A701	LAMP, REMOTE RECORD: 120 volts, 6 watts	060-006
S701	PUSHBUTTON, fast forward	120-013
S702	Same as S701, rewind	120-013
S703	PUSHBUTTON, STOP	120-014
S704	Same as S701, START	120-013
S705	Same as S701, RECORD, single track	120-013
	Same as S701, RECORD, dual track	120-013
	REMOTE CONTROL UNIT, dual track, complete with 30 foot cable	5763-2
	REMOTE CONTROL PANEL, single track, unwired, less cable and box	5763-1
	REMOTE CONTROL PANEL, dual track, unwired, less cable and box	5763-3
	WOODBOX, grey	3661-00