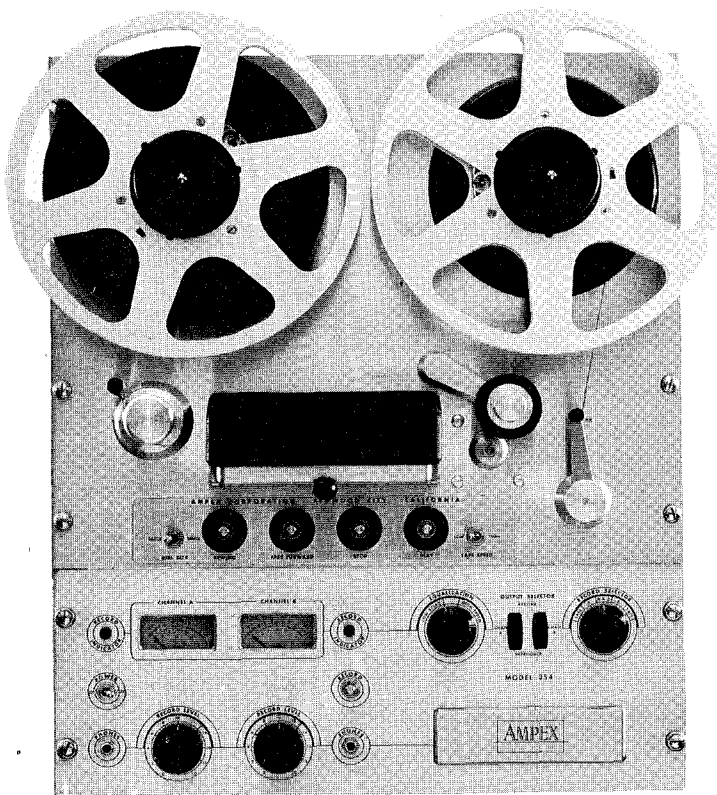


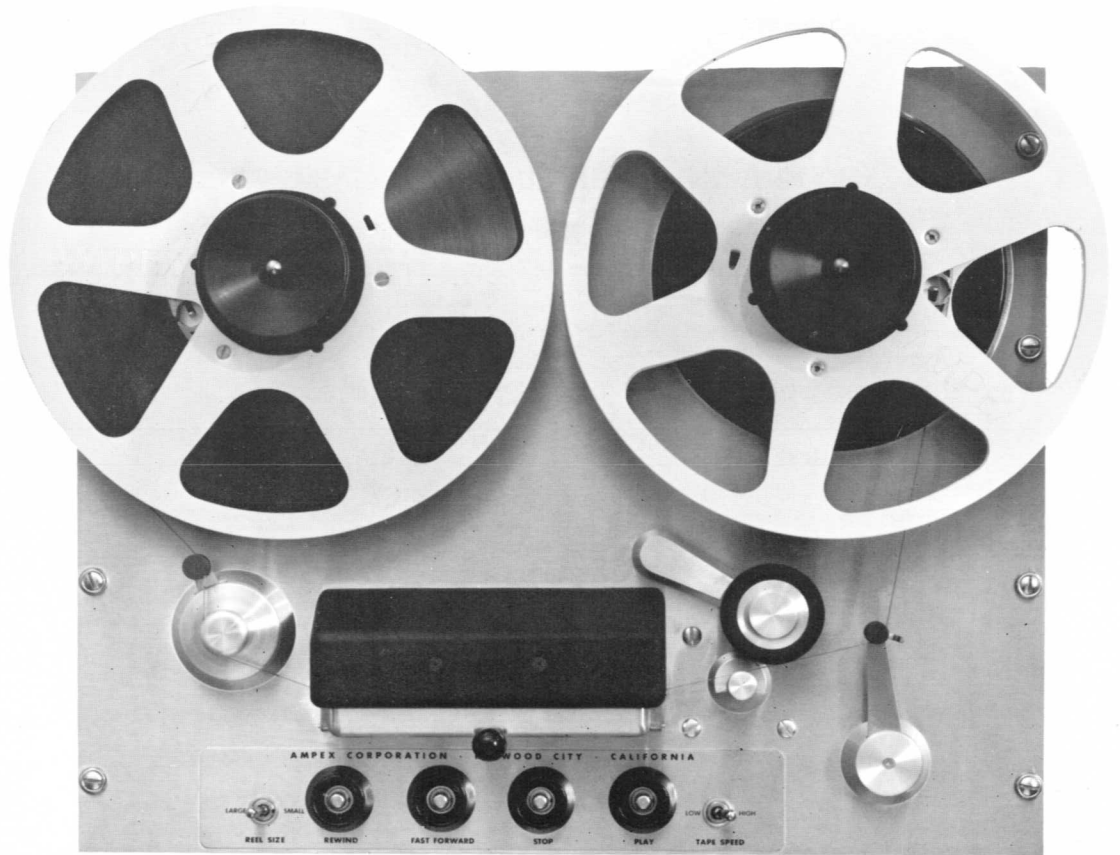
AMPEX
PROFESSIONAL PRODUCTS
COMPANY



AMPEX SERIES



TWO TRACK STEREOGRAPHIC
RECORDER/REPRODUCER



AMPEX SERIES

354

TM 2011A

JUNE 1960

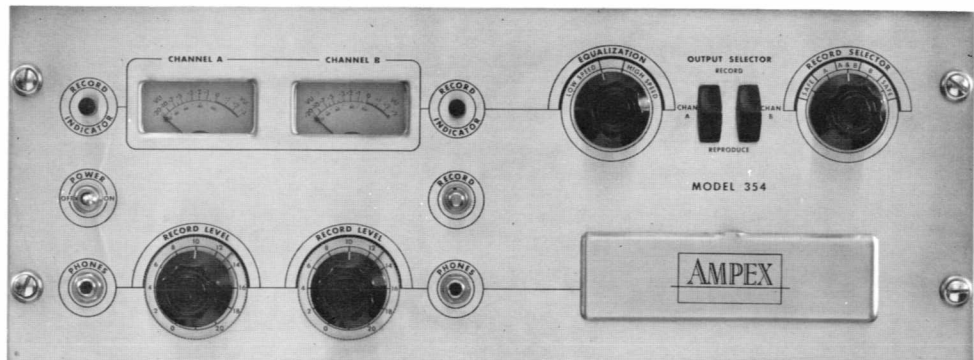


table of Contents

section

topic

page

1	DESCRIPTION AND PERFORMANCE CHARACTERISTICS	
	General	1-1
	Performance Characteristics	1-2
	Equipment Available	1-4
2	INSTALLATION	
	General	2-1
	Interconnecting	2-1
	Mounting	2-1
	Power Connection	2-3
	Output	2-3
	Input	2-3
	Phones	2-3
	Remote Control	2-3
	60 Cycle Amplifier	2-4
	Overall Performance Check	2-4
	Distortion	2-4
	Flutter and Wow	2-4
3	OPERATION	
	General	3-1
	Summary of Controls, Switches and Indicators	3-2
	Operating Techniques	3-4
4	THE DEVELOPMENT AND THEORY OF MAGNETIC TAPE RECORDING	
	Theory of Magnetic Tape Recording	4-2
5	TAPE TRANSPORT MECHANISM	
	General	5-1
	Tape Supply and Take-Up Systems	5-1
	Tape Drive System	5-4
	Brake Operation	5-4
	Control Circuit	5-5
	Routine Maintenance	5-7
	Adjustments	5-10
	Spring Scale Reading	5-11
	Parts List, Tape Transport	5-15
6	THE AMPEX HEAD	
	General	6-1
	Individual Replaceable Head Parts	6-2
7	ELECTRONIC ASSEMBLY	
	General	7-1
	Record Amplifier	7-2
	Reproduce Amplifier	7-4
	Bias and Erase Oscillator	7-4
	Power Supply	7-5
	Alignment and Performance Checks	7-5
	Maintenance and Troubleshooting	7-13
	Ordering Parts	7-15
	Parts List, Electronic Assembly	7-16

list of Illustrations

Section

Topic

Page

	Ampex Series 354 Recorder/Reproducer.....	iv
2	Series 354 Recorder/Reproducer— $\frac{3}{4}$ View	2-2
	Rack Layout (Model 354).....	2-2
	Interconnecting	2-5
3	Tape Threading Path.....	3-4
4	Valdemar Poulsen	4-1
	Magnetization of Tape.....	4-2
	Record Head	4-2
	Recording Medium Magnetization Curve.....	4-2
	Reproduce Head Characteristics.....	4-3
	Achieving Flat Over-All Response.....	4-4
5	Component and Assembly Callouts.....	5-2
	Tape Tensioning	5-3
	Take-Up and Rewind Motor Assemblies.....	5-5
	Control Circuit Box.....	5-6
	Demagnetizing the Heads.....	5-9
	Control Circuit Box Callouts.....	5-10
	Capstan Idler Pressure Measurement.....	5-11
	Brake Band Replacement.....	5-13
	Remote Control.....	5-14
	Schematic Diagram Tape Transport Control Circuits (Foldout Sheet).....	
	Simplified Schematic Diagram Control Circuit Model 354 Tape Transport (Foldout Sheet).....	
6	Two-Track Head Assembly.....	6-2
7	Location of Electronic Subassemblies.....	7-2
	Block Diagram, Record Circuit.....	7-2
	Amplifier Chassis, Front Panel.....	7-3
	Amplifier Chassis, Rear View.....	7-3
	Block Diagram, Reproduce Circuit.....	7-4
	Simplified Schematic Diagram, Line Output Amplifier.....	7-4
	Block Diagram, Reproduce Alignment Connections.....	7-6
	Reproduce Alignment Controls.....	7-6
	Record Amplifier Bias Adjustment Controls.....	7-8
	Record Level Calibration Controls.....	7-8
	Record Head Azimuth Adjustment.....	7-9
	Record Head Azimuth Controls.....	7-9
	Frequency Response Adjustment Controls.....	7-10
	Noise Balance Adjustment Controls.....	7-11
	Signal-To-Noise Ratio Computations.....	7-12
	Noise Measurement Controls.....	7-12
	Troubleshooting the Reproduce Amplifier.....	7-13
	Troubleshooting the Record Amplifier.....	7-14
	Applicable Response Curves.....	
	Parts Location (Etched Board) (Foldout Sheet).....	
	Schematic Diagram (Foldout Sheet).....	



Ampex Series 354 Recorder/Reproducer