

AMPEX

SOLID STATE

AG-350

Introducing...

The New, World Standard in Professional Audio Recording



AG-350

A NEW ADVANCED GENERATION OF THE FAMOUS 350 SERIES

With over 12 years of proven professional service behind it, the 350 Series has become the unquestioned World Standard of Professional Audio Recorders. There are over 18,000 Ampex 350 Series recorders in use throughout the free world — many with more than 90,000 hours of logged time.

The new solid state AG-350 will begin a new era for this famous Series. Evolving from the three year research and development program that produced the new Ampex MR-70 Master Recorder, it incorporates new features, new operating convenience, plus proven performance and reliability. The price range plus a variety of model configurations serve the operational and economic requirements of the broadcast industry or other professional users.*



**The new Ampex MR70 Master Recorder (\$4500 to \$9000) is the ultimate in master recording for the major recording studios throughout the world.*

TAPE TRANSPORT FEATURES

- 1 **RETAINS FAMOUS, TIME-PROVEN 350 SERIES TAPE TRANSPORT FEATURES** of previous 350 Series, plus new features designed for greater operator convenience.
- 2 **AUTOMATIC EQUALIZATION** . . . switching is done automatically when tape speed is selected.
- 3 **RIGID TOP PLATE** . . . maintains precision alignment of all mechanical components even after years of heavy-duty use.
- 4 **DIRECT DRIVE CAPSTAN** . . . machined to exacting tolerances to guarantee accurate tape speeds.
- 5 **CAPSTAN IDLER** . . . accurate traction pressure is maintained through positive solenoid control. Idler disengages automatically when power is shut off (at end of reel or in case of power failure) to eliminate possible flat spots on idler pulley.
- 6 **IDLER PULLEY** . . . has heavy-mass flywheel to provide essential filtering. This, plus precision capstan assembly and hysteresis synchronous motor, holds wow and flutter to absolute minimum.
- 7 **TAKE-UP TENSION ARM** . . . designed to eliminate tape "bounce" in fast starts, and gives even, smooth tape wrap on take-up reel.
- 8 **PUSH BUTTON CONTROL PANEL** . . . large relay/solenoid actuated pushbuttons logically and sequentially placed, add to ease of editing and cueing. Fully remote controllable.

Rewind . . . gentle, smooth tape handling even at fast wind speeds. Rewinds 2400 foot reel in one minute.

Fast Forward . . . can be used with rewind button to "rock" tape for fast editing or cueing without spilling tape. Buttons are electrically interlocked to prevent damage or jamming.

Stop . . . stops tape motion in 0.13 second (from play/record mode) . . . essential to tight program cueing and special effects.

Play . . . tape achieves accurate playing speed in less than 1/10 second . . . essential to tight programming and special effects.
- 9 **REEL SIZE SWITCH** . . . automatically adjusts correct tension for 10½ inch or smaller reels.
- 10 **QUICK-RELEASE HOLD-DOWN KNOBS** . . . provide firm grip and have self-locking feature to assure easy, fast loading and unloading.
- 11 **TAPE SPEED SWITCH** . . . selects the fast or slow speed of the recorder and automatically switches electronics for proper equalization.

BRAKES . . . self-limiting design, factory-set to eliminate the possibility of exceeding the elastic limit of the tape. Stainless steel drums provide long wear and reliability.

ELECTRONICS FEATURES

100% SOLID STATE DESIGN . . . cool operating, low power consumption. Plug-in transistors are standard types, readily available and easily changed.

EASY ADJUSTMENTS . . . all necessary adjustments can be made right on the front control panel. 12

PLUG-IN EQUALIZERS . . . are used throughout the recorder and save time in maintenance. 13

LOW FREQUENCY ADJUSTMENT . . . now you can easily make new low frequency reproduction equalization adjustments. 14

SMALLER ELECTRONIC PANEL . . . panel measures only 5¼ x 19 x 8½", smaller than the previous 350 by 1¾"; saves rack space. 15

LARGE VU METERS . . . accurate, easy to read for better recording. 16

SINGLE RECORD BUTTON . . . for one or two channels for operating speed and convenience. 17

RECORD/SAFE SWITCH . . . with ready light for operator convenience at remote location. 18

LOCKING-LEVEL KNOB . . . "Locks" on both record and reproduce level. Eliminates accidental level changes. 19

ACCESSORY SOCKET . . . for plug-in matching or bridging transformer, or mike pre-amp. (Rear of chassis.)

HEAD ASSEMBLY FEATURES

HEAD GATE ASSEMBLY . . . gate opens wide for easier editing, cleaning and threading. 20

NEW ERASE HEAD . . . ferrite type erase head improves erase characteristics. 21

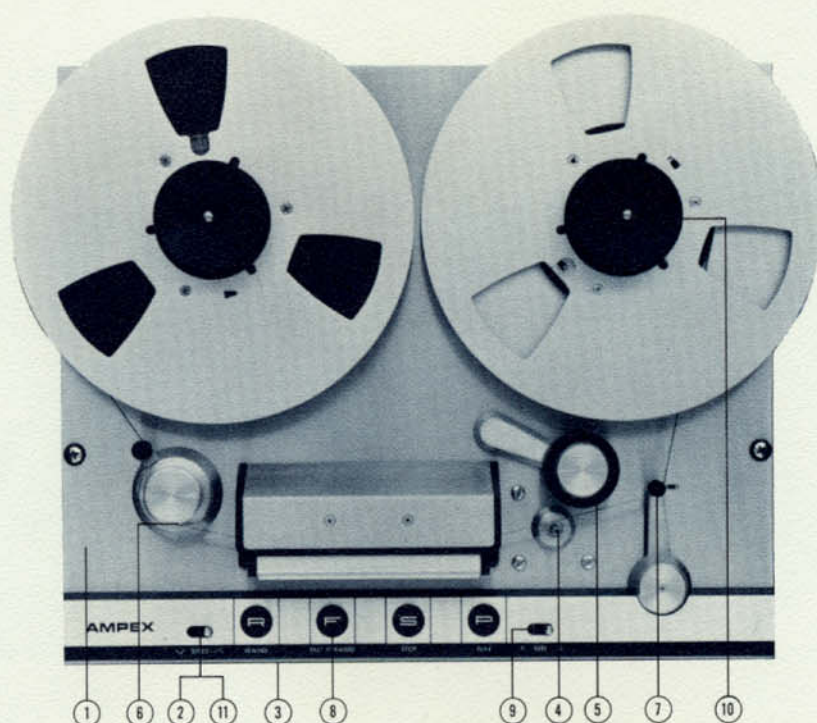
RECORD AND PLAYBACK . . . heads individually mu-metal shielded for maximum hum rejection. 22

GLASS TAPE LIFTERS . . . non-wearing. Permit "touch cueing" to locate material in fast forward or rewind. 23

STRAIGHT LINE TAPE PATH . . . easy tape threading. 24

HEAD ADJUSTMENTS . . . positive, self-locking azimuth and zenith adjustment. 25

HEAD ASSEMBLY EASILY REMOVABLE . . . simply remove four screws and unplug head cable.

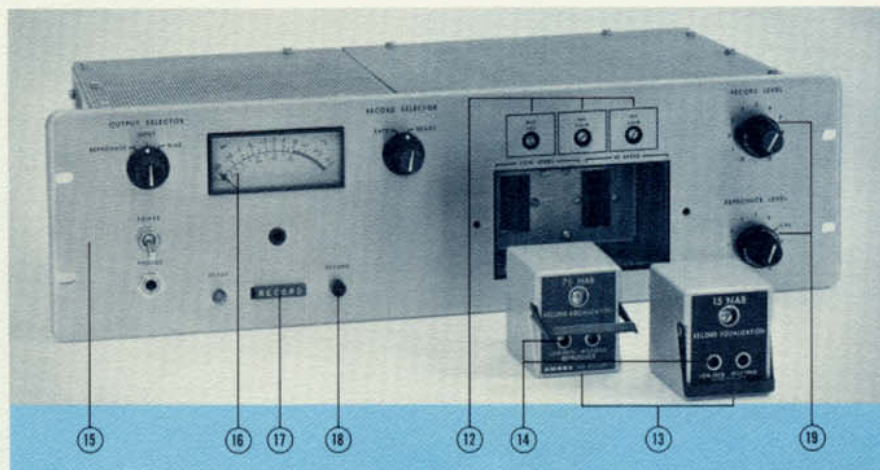


PRECISION TAPE TRANSPORT

The mark of a truly professional recorder is its ability to perform within required specifications under heavy-duty use and years of service.

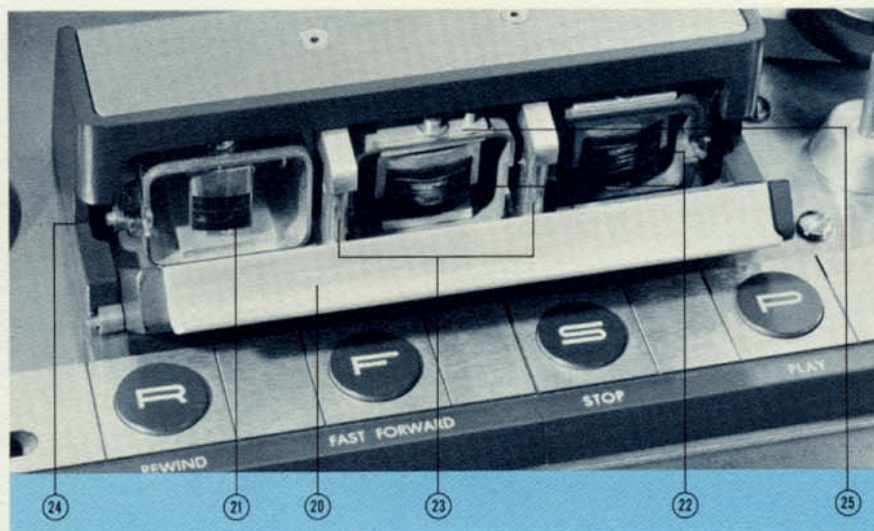
Experience shows that the tape handling mechanism (tape transport) accounts for 2/3 of a recorder's performance. In most recorders, the performance and specifications (wow, flutter, timing, etc.) deteriorate after the unit is in service due to wear and aging of the mechanism. However, the precision with which the Ampex 350 Series and the new AG-350 Series are built reduces wear to absolute minimums — and, what small amount of wear does occur after years of use, is easily adjustable to original specifications.

With normal preventive maintenance the AG-350 will continue to operate within its published specifications not just during the first twelve months, but for the entire life of the recorder. In every sense it is heavy duty, and trouble free . . . but still easy to operate for the many professional requirements in industry, business, education, medicine and government.



SOLID STATE ELECTRONICS

The thousands of man hours expended in transistor research for applications in Ampex sophisticated computers, instrumentation and television recorders, was utilized in the electronic design of the new AG-350. Its 100% solid state circuitry takes maximum advantage of the capabilities and reliability inherent in transistors.



HEAD ASSEMBLY

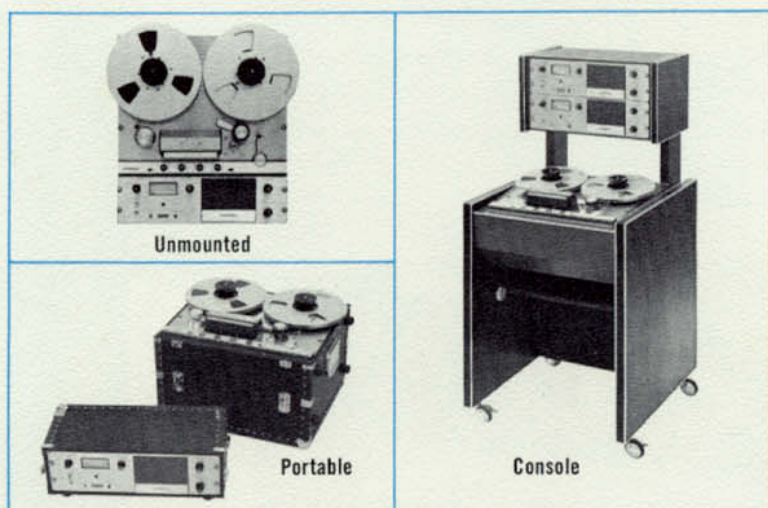
Ampex Professional Audio heads are world renowned for their unmatched performance and long life. This technical mastery is exclusive with Ampex, and is based on over 15 years' experience in the precision manufacture of heads for Professional Audio, Instrumentation and Missile recorders.

Ten thousand hours is usually considered "good" head life. Ampex heads that have been in use for over 15,000 hours are still giving the same high performance as when they were new. There are reported cases where Ampex heads have over 36,000 hours of use and are still performing within the published specifications.

CONVENIENT MODELS FOR ALL PROFESSIONAL RECORDING

The four basic AG-350 models, covering all monophonic and stereo recording and playback requirements, provide the complete flexibility and convenience needed in professional recording.

AG-350's are available in console, portable and unmounted versions as shown below, and with your choice of 3 3/4-7 1/2 ips, or 7 1/2-15 ips. Your experienced Ampex distributor will assist you in selecting the proper model and mounting which best suits your individual requirements. (Prices range from \$1350 to \$2700.)



MODELS AVAILABLE:

- | | |
|-----------------|--|
| AG-350-1 | Recorder/Reproducer
(Mono — available in console, portable, and unmounted) |
| AG-350-2 | Recorder/Reproducer
(Stereo — available in console, portable, and unmounted) |
| AG-355-1 | Reproducer
(Mono — available in console, unmounted) |
| AG-355-2 | Reproducer
(Stereo — available in console, unmounted) |

Universal Series: *For world-wide applications, models AG-350-1, AG-350-2, AG-355-1, and AG-355-2 are available in UNIVERSAL models. They contain a built-in adjustable multi-tapped power transformer, permitting different input line voltages in the range from 90 to 130 volts and 200 to 240 volts, operating on virtually any of the world's standard line voltages with no need for external step-down transformers.*

Prices and catalog numbers of all AG-350 versions on price sheet #1821 B.

APPLICATIONS FOR PROFESSIONAL RECORDING

The confidence placed in the Ampex 350's by professional recording personnel throughout the world has made it the dominant recorder for all professional applications where quality, reliability, economy and low maintenance are strict requirements:

- BROADCASTING
- RECORDING STUDIOS
- INDUSTRY (for acoustic research, vibration analysis, quality control)
- MEDICINE (for research, analysis, therapy)
- EDUCATION
- RELIGIOUS ORGANIZATIONS
- BUSINESS
- GOVERNMENT AND DEFENSE

The new Ampex AG-350 is your assurance of maintaining professional recording excellence whatever your recording requirements.

ACCESSORIES

MX-10 MIXER, 4-position, 2-channel . . . compact professional mixer for two-channel stereo and monophonic recording. Four mixing positions accept up to four low-impedance microphone inputs or two low-Z microphone inputs and two line inputs. Switching control for each input permits feeding input either to the left or right, or split to feed equally into both channels. Ideal for "center solo" stereo recording techniques. The two-channel facilities are also excellent for monophonic applications where one channel is required for program and one for cues or other information. For more inputs, two or more of these mixers can be coupled, with overall master gain controlled by the last unit in the coupling.

REMOTE CONTROL . . . Greatly expands use of recorder, allowing operation from two or more locations. Duplicates all functions of record, play, fast forward and rewind. Indicator lights show whether recorder is in "play" or "record" mode. The remote control's "record" button will not function when the record selector is in "safe" position. This prevents accidental erasure. Available as a boxed unit with 30-foot cord, or as a flush-plate unit for mounting on a control panel.

PLUG-IN EQUALIZERS . . . Interchangeable units provide NAB or CCIR curves appropriate to tape speed used. Equalizers for other curves (to meet special requirements) available on special order.

PLUG-IN INPUT UNITS . . . Interchangeable units match various inputs such as zero loss transformer for balanced bridging, single unit switchable 40 or 60 db.



World-wide sales and service.

Write for the name of your nearest distributor.

SPECIFICATIONS

TAPE SPEEDS:

7½ and 15 ips, or 3¾ and 7½ ips.

Metric Conversion Table

ips	CM/sec
3¾	9.52
7½	19.05
15	38.10

FREQUENCY RESPONSE:

	OVERALL	
15 ips	±2 db	30-18,000
7½ ips	±2 db	40-10,000
	+2-4 db	30-15,000
3¾ ips	±2 db	50-7,500

PLAYBACK

15 ips	±1 db	50-10,000
	±1½ db	@ 15,000
7½ ips	±1 db	50-10,000
	±2 db	@ 12,000
	+2-3 db	@ 15,000
3¾ ips	±1 db	50-5,000
	±2 db	@ 7,500

SIGNAL-TO-NOISE RATIO:

Speed	Full Track	2 Track
15 ips	60 db	55 db
7½ ips	60 db	55 db
3¾ ips	55 db	50 db

Peak record level to unweighted noise. Includes bias, erase and playback amplifier noise.

FLUTTER:

Speed	Percentage
15 ips	below 0.11% rms
7½ ips	below 0.14% rms
3¾ ips	below 0.18% rms

Percentage of total flutter is measured by the methods of American Standard Association Z57.1—1954, in a band 0.5 to 200 cps, while reproducing an Ampex Flutter Test Tape (flutter on test tape less than 0.03%).

PLAYBACK OUTPUT:

+8 dbm into 600 ohms—restrappable for +4 dbm output, balanced or unbalanced. Maximum of +28 dbm before clipping.

RECORD INPUT:

100k bridging—20 dbm to produce recommended operating level.

ELECTRONIC ADJUSTMENTS:

Accessible from front—equalization; reproduce level; record level; reproduce calibration; record calibration; bias adjustment.

START/STOP:

Start: Tape at full speed in less than 1/10 second.
Stop: At 15 ips, tape moves less than 2 inches after pressing stop button.

PLAYBACK TIMING ACCURACY: ±0.2% (±3.6 seconds in 30 minutes recording time).

MOUNTING CONFIGURATIONS: Portable, Unmounted, Console (electronics above transport).

TAPE WIDTH:

Standard ¼" tape.

REEL SIZE:

Up to 10½ inch reels.

EQUALIZATION:

All standard models supplied with NAB equalization. CCIR curves available on special order.

REWIND TIME:

Approximately 1 minute for 2400 feet NAB reel; 30 seconds for 1200 ft. EIA reel. (Thin base tapes proportionately longer.)

POWER REQUIREMENTS:

Single channel models require 2.0 amperes current; two channel models require 2.5 amperes. Standard models are 117 volts. (Universal Series models have built-in multiple tapped power transformer for power input through two ranges; 90 to 130 volts a.c. and 200 to 240 volts a.c.)

DIMENSIONS/WEIGHT:

Standard 19" wide panels with commercial notching for rack mounting. **Tape transport:** uses 15½ inches of rack space, weight 50 lbs., **Electronics:** 5¼ inches of rack space, weight 19 lbs. (two electronics required for two channel stereo). **Console:** 52" high (to top of electronics), 24¾" wide, 27¼" deep, approximate weight 180 lbs.

WARRANTY:

Ampex one year warranty.

AMPEX

AMPEX CORPORATION

401 Broadway • Redwood City • California • 94063

North Sydney, Australia • Rio de Janeiro, Brazil • Toronto, Canada • Bogota, Colombia • Reading, England
Paris, France • Frankfurt/Main, Germany • Hong Kong, B.C.C. • Mexico City, Mexico • Lugano, Switzerland

LITHO IN U.S.A.—1706—8-65

AG-350 SERIES PROFESSIONAL RECORDERS/REPRODUCERS

PRICE SCHEDULE #1821C

SUPERSEDES #1821B

EFFECTIVE DATE NOVEMBER 22, 1965

THE AG-350 RECORDERS/REPRODUCERS are a new Series. The electronics are newly designed and are 100% solid state for improved performance and reliability. The tape transport retains the time proven features of the famous Ampex 350, plus new features for greater operational efficiency and convenience. The AG-350's are full professional recorders designed to sustain professional quality over a long life of continuous duty. The three precision motors used include two torque motors and a heavy-duty hysteresis synchronous direct drive motor. Pushbutton relay-sole-

noid operation permits using an optional full-remote plug-in control. Selector switch adjusts tension automatically for proper reel size. There is an individual electronics panel for each channel, and an input selector switch for low-Z mike, unbalanced or balanced bridging inputs. Large VU meters have selectors that read: input, output, bias. Separate record and play electronics permit easy and complete monitoring while recording. All versions are dual speed, offering choice of 7½-15 ips, or 3¾-7½ ips. Equalization is automatically changed to proper setting by tape

speed switch. New head gate design allows wider opening for easy editing and threading. AG-355 REPRODUCERS use the same basic transport as the AG-350 series, but contain playback facilities only. Electronics in the AG-355 are also completely solid state. One-channel models have full-track or half-track head; two-channel models have two-track reproduce head assembly or two-track and four-track (quarter-track) switchable reproduce head assembly. Four-track (quarter-track) reproduce head only available on special order.



General Description	Speeds (ips) and Equalization	Heads (tracks)	Mounting	Order by Catalog Number		Professional User Price
				60-cycle	50-cycle	
AG-350-1 Single-channel (Monophonic)	7½ and 15 NAB	Full	Unmounted	4010035-01	4010035-02	\$1750.00
			Portable	4010035-05	4010035-06	1870.00
			Console	4010035-03	4010035-04	2075.00
		Half	Unmounted	4010035-07	4010035-08	1750.00
			Portable	4010035-11	4010035-12	1870.00
			Console	4010035-09	4010035-10	2075.00
	3¾ and 7½ NAB	Full	Unmounted	4010035-13	4010035-14	1750.00
			Portable	4010035-17	4010035-18	1870.00
			Console	4010035-15	4010035-16	2075.00
		Half	Unmounted	4010035-19	4010035-20	1750.00
			Portable	4010035-23	4010035-24	1870.00
			Console	4010035-21	4010035-22	2075.00
AG-350-2 Two-channel (Stereo)	7½ and 15 NAB	Two Track	Unmounted	4010036-01	4010036-02	2345.00
			Portable	4010036-05	4010036-06	2475.00
			Console	4010036-03	4010036-04	2670.00
		Two Track (with 4 position head assembly)	Unmounted	4010036-13	4010036-14	2395.00
			Console	4010036-15	4010036-16	2720.00
			Unmounted	4010036-07	4010036-08	2345.00
	3¾ and 7½ NAB	Two Track	Portable	4010036-11	4010036-12	2475.00
			Console	4010036-09	4010036-10	2670.00
			Unmounted	4010036-19	4010036-20	2395.00
		Two Track (with 4 position head assembly)	Console	4010036-21	4010036-22	2720.00
AG-355-1 Single-channel (Monophonic)	7½ and 15 NAB	Full	Unmounted	4010037-01	4010037-02	1325.00
			Console	4010037-03	4010037-04	1650.00
		Half	Unmounted	4010037-07	4010037-08	1325.00
			Console	4010037-09	4010037-10	1650.00
	3¾ and 7½ NAB	Full	Unmounted	4010037-13	4010037-14	1325.00
			Console	4010037-15	4010037-16	1650.00
		Half	Unmounted	4010037-19	4010037-20	1325.00
			Console	4010037-21	4010037-22	1650.00
AG-355-2 Two-channel (Stereo)	7½ and 15 NAB	Two Track	Unmounted	4010038-13	4010038-14	1525.00
			Console	4010038-15	4010038-16	1850.00
		Two and Four Track	Unmounted	4010038-01	4010038-02	1595.00
			Console	4010038-03	4010038-04	1920.00
	3¾ and 7½ NAB	Two Track	Unmounted	4010038-19	4010038-20	1525.00
			Console	4010038-21	4010038-22	1850.00
		Two and Four Track	Unmounted	4010038-07	4010038-08	1595.00
			Console	4010038-09	4010038-10	1920.00

NOTES:

- Universal voltage models (with switchable CCIR/NAB equalization; multi-tap transformer) and custom units are available. Consult your regional Ampex office.
- Operation and Maintenance Manual furnished with each recorder.
- All units listed are ¼ inch tape width, NAB equalization.

Ampex 600 Series recording tape recommended for optimum performance.

Ampex equipment may be sold or leased under special Ampex finance plans.

AG-350 SERIES: ACCESSORIES

DESCRIPTION		Order by Catalog Number	Professional User Price
GENERAL ACCESSORIES			
REMOTE CONTROL: Wired, mounted in small housing, 30-ft. cable.		96510-01	\$ 85.00
Unmounted, unwired (no cable).		96520-01	57.50
FOUR-POSITION STEREO HEAD ASSEMBLY: (for AG-350 series). Fits into same space as standard 3-position stereo assembly, adds 4-track playback head. Completely assembled unit.		96620-05	420.00
MIXER — MODEL MX-10 Four position, two channel mixer, feeds 4 or 2 mike and 2 line inputs to either or both channels. Unmounted. For Ampex recorders and general use.	With gray knobs (for PR-10)	96900-01	395.00
	With black knobs (for AG-350/350/300)	96900-03	395.00
SPEAKER/AMPLIFIER — MODEL 622 Ideal companion to 602 Series, PR-10 Series, AG-350 Series and other recorders. Gives studio sound in compact size. Matched 8" speaker enclosure, and 10 watt push-pull amplifier.		01-0622	189.50
PORTABLE CASES			
For tape transport		4030154-01	90.00
For one chassis of electronics (AG-350-1/AG-355-1/AG-355-2 Electronics, or MX-10 Mixer) 5¼" capacity		4150296-01	50.00
For two chassis of electronics (AG-350-2 or AG-350-1 with Mixer) 10½" capacity		4150297-01	65.00
OPERATION AND MAINTENANCE MANUALS (furnished with recorder) AG-350 Series (includes AG-350-1, -2, AG-355-1, -2)		4890161-02	10.00
CONSOLE CABINETS (houses transport and electronics) AG-350 Series (for AG-350-1, -2; AG-355-1, -2) Electronics over Transport		4010041-01	385.00
MICROPHONE PREAMPS (required for microphone use with AG-350-1, -2; AG-100) plug-in type, one per channel required, low impedance input. 40 db/60 db switchable.		4010040-01	75.00
LINE INPUT TRANSFORMERS For AG-350-1, -2; AG-100; MX-10; plug-in type, one per channel required.	Balanced bridging	4580116-01	14.50
	Matching 600 ohm	4580116-02	14.50
RECORD/REPRODUCE EQUALIZERS FOR AG-350-1, -2 (plug-in type, one per channel required)	15 NAB	4020252-01	25.00
	7½ NAB	4020252-02	25.00
	3¾ (120 µsec)	4020252-03	25.00
MAINTENANCE ACCESSORIES			
Head demagnetizer		4040575-01	9.95
Head Cleaner, 4-Oz. Can		087-007	1.45
Lubricating Oil, in plastic oiler bottle		087-013	1.85
ALIGNMENT TAPES (See separate Alignment Tape Price Schedule for additional tapes and detailed program content.)			
¼ inch — Reproduce Alignment Tape 15 ips, NAB µ/sec, Full track		01-31311-01	21.95
7½ ips, 50 µ/sec, Full track		01-31321-01	21.95
3¾ ips, 120 µ/sec, Full track		01-31331-01	21.95
¼ inch — Calibrated Flutter Test Tape 15 ips, 3 KC only, with meter calibration segment		01-31316-01	21.95
7½ ips, 3 KC only, with meter calibration segment		01-31326-01	21.95