

AMPEX

AG-440B

the quiet
professional

features:

Transport controls are logically and sequentially arranged for operating convenience. Acoustic damping has been added to provide extremely quiet operation. Remote control switching is built into the AG-440B.



Precision milled die-cast top plate provides absolutely flat, rigid mounting of mechanical components for tracking alignment.

Automatic tape lifters ease the tape away from the heads during rewind and fast forward, and do not return to normal position until tape comes to complete stop. For editing or cueing, this can be overridden manually, electrically, or by remote control.

Tape guides rotate to provide guiding for $\frac{1}{4}$ or $\frac{1}{2}$ inch tape. It is not necessary to remove guides to accommodate change in tape width.



Individual torque motor tension controls provide compensated switching for large or small hub reels. Slide resistors under transport provide fine adjustments.

Tape speed switch selects fast or slow speed and automatically switches electronics for proper equalization.

Time tested and proven braking system provides smooth, fast positive action. Individual solenoid actuated brakes on each motor enable precise adjustment for optimum performance.

Capstan idler maintains accurate traction pressure through quiet, yet positive solenoid control.

Reel idler pulley has heavy-mass flywheel to provide essential filtering. This, along with the precision capstan assembly and hysteresis synchronous motor, holds flutter and wow at a minimum.

Transport houses regulated power supply and master bias oscillator to feed up to four electronics channels. This eliminates inter-channel beats and assures stable performance. Modulation noise is reduced by using 150 kHz bias frequency.

Electronic modules incorporate logic and control circuitry that eliminate annoying editing "pops" when switching record amplifier on and off.

All electronics are so designed that modules plug into the front of the chassis for easy, rapid accessibility. Playback, record and bias amplifier boards have all necessary adjustments accessible from the front of the recorder. A security cover discourages unauthorized adjustments.



AG-440B

quiet in the studio

The new AG-440B is studio quiet. It's the same rugged reliable professional recorder as its predecessor, but with a new standard for quiet operation. Quiet enough for use in the studio with live microphones.

THE QUIET SYSTEM. The AG-440B has redesigned electro-mechanical components and circuitry for acoustically quieter operation. All transport controls have been damped to eliminate 80% of mechanical noise. Editing "pops" have been eliminated through new logic circuitry. Automatic tape lifters are delayed to eliminate "shrieking" as tape is stopped.

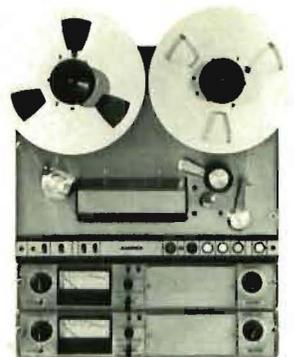
STABILITY. The AG-440B's rigid die-cast frame provides absolutely flat mounting of all mechanical components and assures tracking stability. With its three point mounting, no flexing or distortion will occur in any configuration, whether mobile or fixed.

MAINTAINABILITY. The AG-440B is designed for rapid, easy maintenance, and minimum downtime. Modular design, front of panel plug-in boards provide fast replacement or servicing. (Reserve boards permit the user to have full backup should split second maintenance be required.) Individual head stacks can be replaced with a single screw and plug-in connector. Transport motors, guides and major components can be quickly removed and replaced in exact alignment because of the precision milled transport casting. Console models permit rotating transport for rapid accessibility.

CONVERTIBILITY. The AG-440B is converted between $\frac{1}{4}$ and $\frac{1}{2}$ inch tapes with ease. Tape transport guides rotate for either $\frac{1}{4}$ or $\frac{1}{2}$ inch tape. Four channel capability may be added to one or two channel AG-440B equipment by installing additional electronics, changing heads and head cables. The AG-440B console over-bridge modular mount accepts from 1 to 4 (or more) $3\frac{1}{2}$ inch electronics panels.

RELIABILITY. The precision-milled, die-cast top-plate provides exact alignment of components for trouble-free tape handling. The proven AG-440B electronic module is not only the quietest in the industry, but also the most trouble-free.

FLEXIBILITY. The AG-440B is available in console, portable, or unmounted for rack installation; one, two, or four track configurations. Custom versions can be supplied on special order, or field converted to meet special requirements.



Also available is the AG-445B, a playback only version of the AG-440B. It is available in one, two, or four channel configurations as console or unmounted.

INVESTMENT PROTECTION. The Ampex AG-440B allows you to expand when necessary. You can keep pace with changing requirements, by using the building block increments of Ampex's new quiet generation in professional audio recorders.

FINANCING. Ampex offers special lease or installment purchase plans on all AG-440B equipment. See your distributor, or contact one of the Ampex District Offices listed on the back of this brochure.

Individual electronic modules require only 3½ inches of vertical space. Record level and reproduce level are controlled by new large skirted knobs with reset indicators.



Electronics have built-in SEL-SYNC* (selective synchronization) that allows selective switching of record heads for operation as playback heads.

Equalizers plug into record and playback boards to match individual heads and transport speeds. Adjustments are accessible from the front.

Large illuminated easy-to-read VU meter can be switched to read recorder input, reproducer output and bias current.

Head assemblies can be replaced in less than four minutes by removing three screws. The gate opens fully to allow access to the heads for editing, head cleaning or demagnetizing. The head assembly provides adequate space for a fourth head. Individual plug-in head stacks are easily replaced.

Jewel bearing scrape flutter idler reduces scrape flutter by 75%. An accessory idler is available for mounting between the erase and record heads to further reduce flutter.

All heads are low impedance which reduces microphonics and permits longer head cables without high frequency loss.

Head stacks mount with a single screw and plug-in connector permitting individual replacement or configuration changes.

Playback heads have triple shields with lapped housing and covers for minimum noise.

Flat top head housing permits mounting of commercial edit block.

*TM Ampex Corporation

accessories:

REMOTE CONTROL. Allows operation from one or more locations. Duplicates all functions of record, play, fast forward, rewind, stop and tape lifter override.

PLUG-IN INPUT UNITS. Interchangeable units match various inputs such as transformer for balanced bridging, 600 ohm line matching, or preamplifiers for both low and high output microphones.

RECORD SCRAPE FLUTTER IDLER. Readily installed between the erase and record heads, second optional scrape flutter idler further reduces flutter.

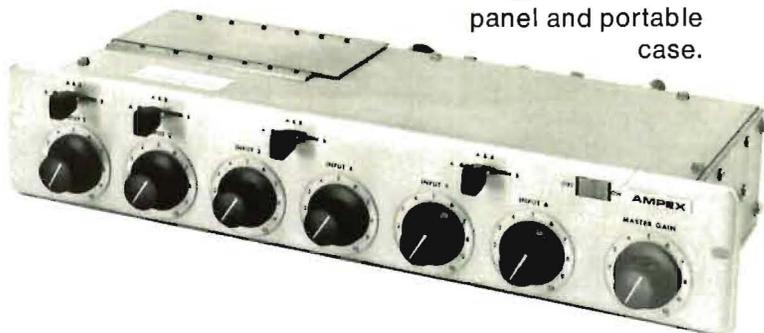
EXTENDER BOARDS. These permit servicing or testing electronics boards while in operation.

PORTABLE AMPLIFIER/SPEAKER SYSTEM. A solid-state, 15 watt portable speaker/amp (AA-620) with system matched components.



MICROPHONE/LINE MIXER

6-position, 2-channel compact professional mixer (AM-10) for two channel stereo and monophonic recording. Available for rack mounting, or with meter panel and portable case.



specifications:

TAPE SPEEDS:

7½ and 15 ips, or 3¾ and 7½ ips.

ips	CM/sec
3¾	9.52
7½	19.05
15	38.10

SIGNAL-TO-NOISE RATIO:

	Full	2	4
Speed	Track	Track	Track
15 ips	66 dB	63 dB	60 dB
7½ ips	66 dB	63 dB	60 dB
3¾ ips	63 dB	56 dB	56 dB

Peak record level to unweighted noise (30 to 18,000 Hz.) Includes bias, erase and playback amplifier noise using Ampex 404 series tape or equivalent.

FREQUENCY RESPONSE—OVERALL:

15 ips ±	2 dB	30-18,000 Hz
7½ ips ±	2 dB	40-15,000 Hz
3¾ ips ±	2 dB	50-7,500 Hz

FLUTTER:	Speed	Percentage
	15 ips	below 0.08% rms
	7½ ips	below 0.1% rms
	3¾ ips	below 0.15% rms

Percentage of total flutter is measured by the methods of American Standard Association 257.1—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. Clip level not less than +28 dBm.

DISTORTION: Second harmonic distortion of a 500 Hz signal recorded at peak record level is less than 0.4%.

RECORD INPUT: 100K unbalanced bridging with dummy plug supplied or 20K balanced bridging with plug-in transformer supplied with each electronics. —17 dBm to produce recommended operating level.

ELECTRONIC ADJUSTMENTS: Accessible from front—equalization; reproduce calibration; record calibration; bias adjustment; bias calibration; erase adjust. SEL-SYNC level and bias trap adjustment on rear of chassis.

S/N ratio and frequency response specifications not applicable to 4-track, ¼-inch models.

START/STOP:

START: tape at full speed in less than 5/10 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" (1 or 2 channels) or ½" (4 channel) Ampex 404 series professional recording tape recommended for optimum performance.

REEL SIZE: Standard up to 10½" reels, adjustable up to 11½" reels.

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

EDIT CONTROL: Edit button stops take-up reel, permitting tape to move in play mode without winding on reel. Button also releases brakes in stop mode for easier threading.

REWIND TIME: Approximately 1 minute for 2400 foot NAB reel; 30 seconds for 1200 foot EIA reel.

AMPLIFIERS: Separate record, reproduce and bias amplifiers plug-in from front of module. Input or output may be monitored during recording.

BIAS AND ERASE FREQUENCY: 150 kHz.

POWER REQUIREMENTS: Standard models are 117 volts, 50 or 60 cycle. Units with multiple tapped power input transformers are available on special order. Single channel requires 2.3 amps; two channel requires 2.5 amps; four channel requires 2.9 amps. All machines are supplied with 3 wire grounding power cord.

DIMENSIONS: Single channel console—40½" high, 24½" wide, 27½" deep. Add 3½" height per additional channel. Standard 19" wide panels with commercial notching for rack mounting. Transport requires 15¾ inches of rack space.

WARRANTY: AG-440B equipment is warranted against defects in workmanship and material for one year.

All units listed by Underwriters Laboratories.

Ampex Corporation reserves the right to change specifications without notice and without obligation. These specifications supersede all previous specifications, stated or implied.

enhancement for the AG-440B, and an 8-track, 1-inch tape version

For increased excellence in highly critical or very sophisticated applications, Ampex offers accessories which offer precise recording control and capability for locking to other media.

Capstan Servo

The capstan servo accessory isolates capstan drive speed from line power, with its associated frequency fluctuations. As a result, timing accuracy is improved, and flutter is greatly reduced. In addition, the capstan servo permits use of other sophisticated controls such as the Sync Lock accessory described below.

Immunity from line power is achieved because the servo supplies its own drive power directly to the printed circuit DC capstan motor. The capstan itself is the extended shaft of that motor.

Variable speed control of from 2 to 50 ips may also be achieved using an external oscillator in conjunction with the capstan servo.

Sync Lock

The sync lock accessory, used in conjunction with the capstan servo, assures constant sync to film or to video. The ability to lock to these media further enhances the application possibilities of AG-440 series recorders.

Signal source for the control track and playback reference may be selected from line, composite

sync, crystal oscillator, or any appropriate external source.

Sync lock may be used with external record/play electronics, or with a plug-in reproduce amplifier for such applications as those involving a neo-pilot control head and a center control track on 1/4" tape. Self-contained variable speed control makes it a simple matter to achieve lip sync.

AG-440-8 Master Recorder/Reproducer

More technical versatility is attainable with the 8-channel version of the AG-440B. This superb and highly reliable recorder, which uses 1-inch tape, is the lowest priced 8-channel recorder available.

It features the same quiet, ease of operation and rugged reliability of the AG-440 series. Permanent tracking alignment is assured by the ribbed, die-cast top plate. Special reel motor control circuitry makes light work of accurately handling 10 1/2-inch reels.

Standard Test and Alignment Tape

A line of standard reproducer alignment test tapes and flutter test tapes is available for NAB, CCIR, IEC, RIAA, EIA and DIN standards. Each is an original recording, not a dub. Complete information included in booklet entitled "Test Tape Applications."

U.S. Sales Offices in: CALIFORNIA, Los Angeles (213) 240-5000, San Francisco (415) 367-4431 • GEORGIA, Atlanta (404) 633-4131 • ILLINOIS, Chicago (312) 593-6000 • MARYLAND, Bethesda (301) 530-8800 • MASSACHUSETTS, Boston (617) 890-2040 • NEW JERSEY, Hackensack (201) 489-7400 (in New York City 736-6116) • OHIO, Dayton (513) 254-6101 • PENNSYLVANIA, Philadelphia (215) 887-7650 • TEXAS, Dallas (214) 637-5100 • Sales and Service Companies throughout the world.

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