

SONY®

SONY AUDIO RECORDERS APR-5000 SERIES

Advancing the
Analog Art



APR-5003

AN ENTIRELY NEW GENERATION OF ANALOG AUDIO RECORDER/REPRODUCERS

Meeting the Needs of Today, Ready for the Demands of the Future

Today the modern studio or video production/post production facility faces an expanding universe of challenges, meeting creative requirements which were inconceivable just a few years ago. Meeting this challenge made necessary a significant advancement in the art of analog recording.

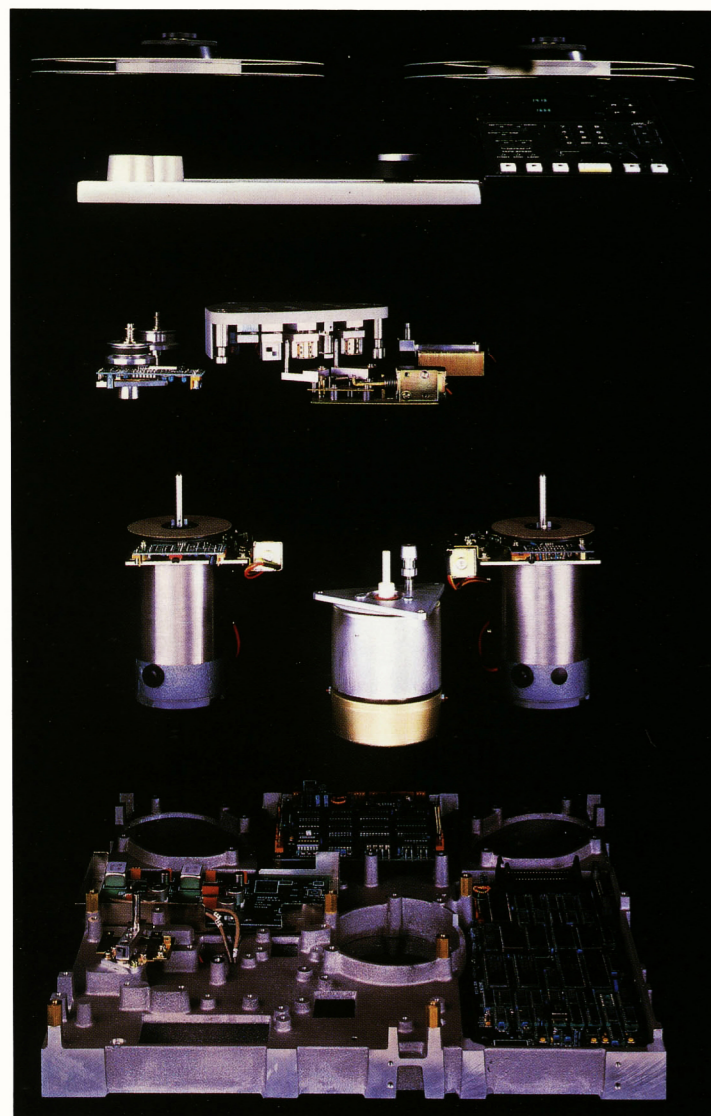
The Professional Choice

A fast paced production environment needs a compact, easy to use analog recorder which offers a wide range of capabilities and the highest level of performance. Critical recording engineers and broadcasters demanded robust construction, superior audio performance and a higher degree of intelligence for system networking. The product of four years of research and development, the APR-5000 series meets these demands and more, and provides the audio professional with equipment made to the Sony standard of quality and reliability.



APR-5002

A NEW GENERATION TAPE TRANSPORT PROVIDES SUPERB RELIABILITY AND PERFORMANCE



Built on a rigid cast chassis, this new transport system features high torque DC spooling motors and a proven DC capstan motor design. An angled tape path makes head accessibility for editing easier than ever before, while maximizing the head wrap angle with a minimum number of surfaces touching the tape.

The transport is controlled by a 16 bit microprocessor, and the control panel shown below provides all customary machine functions as well as MVC (Manual Velocity Control). The processor manages both transport "housekeeping" functions and an audio section.

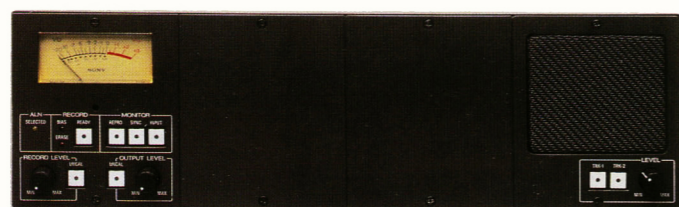
Tape tensions, speed servo control, a thirty memory programable AutoLocator, and audio alignment are among its responsibilities. On the APR-5003 center track time code unit, a built-in time code generator is provided as well as an internal chase/lock capability which allows the machine to synchronize to incoming timecode—EBU and SMPTE (Drop/Non-Drop). It is also possible to cue up any desired point by the 10 keys on the control panel. A varispeed range of $\pm 50\%$ is included, making the transport a versatile tool for both music recording and broadcast applications.



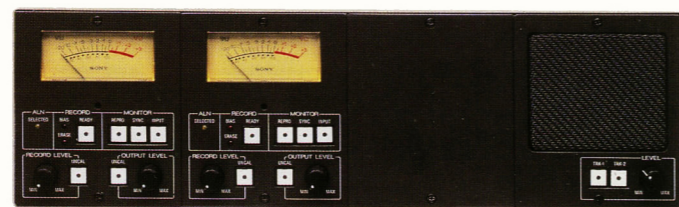
APR-5003 control panel

Built-in Monitoring Facility

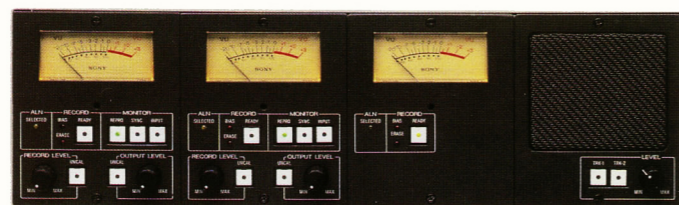
A look at the APR-5000 series monitor/metering housing reveals a modular approach to format conversions. This compact assembly provides the controls professionals require, including a CAL (Calibration) position for the level controls. Each channel module contains metering, bias and erase confidence LED's, record ready switching and record/output level controls. Monitoring is switchable among input signals, output signals from the sync head, and output signals from the repro head. In addition, monitoring from the sync head also ensures punch in/out. The monitor speaker and it's ON/OFF switches are standard equipment.



APR-5001



APR-5002/APR-5002D/APR-5002H



APR-5003



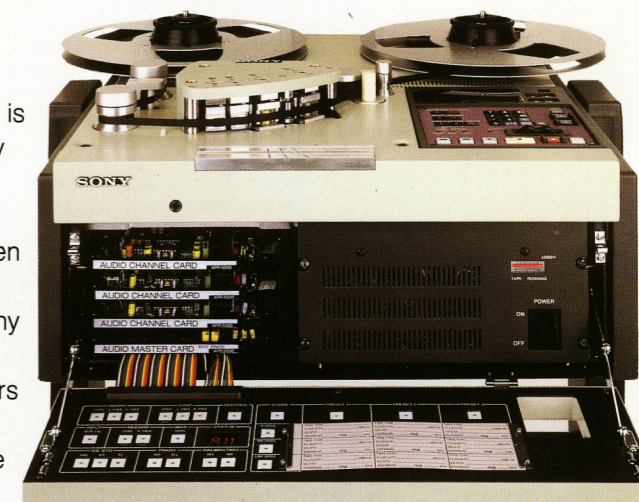
"Intelligent" Head Assembly Speeds Format Conversion

The transport's mechanical design provides for easy tape format/track conversions. Head block units can be interchanged by removing just three screws, and each contains an identity code switch which automatically changes alignment presets.

The head block provides information concerning the number of tracks, speed range, and tape width, to enable automatic optimization of transport ballistics for alternate reel masses.

Digitally Controlled Electronics Make Alignment Faster and Easier Than Ever Before

A flip-down control panel allows one to pre-set three alternative alignments per speed. For a busy facility, this approach virtually eliminates time-consuming realignments with changing tape formulations. It also provides easy accessibility to the audio electronics and modular power supply. The user-friendly keyboard features rapid set up adjustments for levels and equalization, and "double function" keys offer both gap compensation (repro head/sync head) and record compensation (feed forward/feed back adjustments) for the discriminating engineer. After the "individual" track select key is used to trim channels to one another, an "all" track select key may be used for rapid calibration of the machine in areas where channel correspondence is vital (stereo versions, for example). After all of machine alignment parameters have been programmed, they can be stored as one of three preset memories as 8-bit digital data. These are used to adjust for any of the following: various tape formulations, reference levels, bias levels, or alternate equalization standards. The parameters associated with a given head block unit can be written on a removable user labels (supplied) which can be stored with the head block for later reference.



SYSTEM CONFIGURATIONS

MODEL	DESCRIPTION
Recorder/Reproducers	
APR-5001	Audio Recorder (Mono, High Speed) 12 1/2" reel 1/4" signal channel recorder/reproducer, 7 1/2, 15, 30 ips
APR-5002	Audio Recorder (NAB, High Speed) 12 1/2" reel 2-channel, NAB standard recorder/reproducer, 7 1/2, 15, 30 ips
APR-5002D	Audio Recorder (DIN, High Speed) DIN Head (0.75mm guard band, full track erase) version of APR-5002
APR-5002H	Audio Recorder (1/2", High Speed) Half inch stereo format version of APR-5002
APR-5003	Audio Recorder (3-channel, High Speed) 12 1/2" reel, NAB standard 2-channel recorder/reproducer, with IEC center track time code record/reproduce functions
Option	
APR-OP5010	Editing Scissors Machine-mounted editing scissors 1/4" format only
Accessories	
RM-5010	Remote Control Unit Transport remote control for APR-5000 series, includes 10m cable
SU-14	Tape Recorder Stand
APR-HB5001	Headblock Unit Mono Headblock Assembly
APR-HB5002	Headblock Unit NAB 2 Track Headblock Assembly
APR-HB5002D	Headblock Unit DIN 2 Track Headblock Assembly

SPECIFICATIONS

	APR-5001	APR-5002	APR-5002D	APR-5002H	APR-5003
Frequency Response	Record/Reproduce 30ips: AES: 50Hz-28KHz + 0.75/-3dB 15ips: NAB: 30Hz-24KHz + 0.75/-2dB 7.5ips: NAB: 20Hz-20KHz + 0.75/-2dB Record/Sync 30ips: AES: 50Hz-20KHz + 0.75/-3dB 15ips: NAB: 30Hz-16KHz + 0.75/-2dB 7.5ips: NAB: 20Hz-8KHz + 0.75/-2dB	Record/Reproduce 30ips: AES: 50Hz-28KHz + 0.75/-3dB 15ips: NAB: 30Hz-24KHz + 0.75/-2dB 7.5ips: NAB: 20Hz-20KHz + 0.75/-2dB Record/Sync 30ips: AES: 50Hz-20KHz + 0.75/-3dB 15ips: NAB: 30Hz-16KHz + 0.75/-2dB 7.5ips: NAB: 20Hz-8KHz + 0.75/-2dB	Record/Reproduce 30ips: AES: 50Hz-28KHz + 0.75/-3dB 15ips: NAB: 30Hz-24KHz + 0.75/-2dB 7.5ips: NAB: 20Hz-20KHz + 0.75/-2dB Record/Sync 30ips: AES: 50Hz-20KHz + 0.75/-3dB 15ips: NAB: 30Hz-16KHz + 0.75/-2dB 7.5ips: NAB: 20Hz-8KHz + 0.75/-2dB	Record/Reproduce 30ips: AES: 40Hz-25KHz + 0.75/-3dB 15ips: NAB: 25Hz-22KHz + 0.75/-2dB 7.5ips: NAB: 25Hz-22KHz + 0.75/-2dB Record/Sync 30ips: AES: 40Hz-25KHz + 0.75/-3dB 15ips: NAB: 20Hz-20KHz + 0.75/-2dB 7.5ips: NAB: 20Hz-10KHz + 0.75/-2dB	Record/Reproduce 30ips: AES: 50Hz-28KHz + 0.75/-3dB 15ips: NAB: 30Hz-24KHz + 0.75/-2dB 7.5ips: NAB: 25Hz-22KHz + 0.75/-2dB Record/Sync 30ips: AES: 50Hz-20KHz + 0.75/-3dB 15ips: NAB: 30Hz-16KHz + 0.75/-2dB 7.5ips: NAB: 20Hz-8KHz + 0.75/-2dB
Signal-to-Noise Ratio (Record/Reproduce, reference to 510mV/m)	Unweighted, 20Hz - 20KHz 30ips: AES: 64dB 15ips: NAB: 62dB 7.5ips: NAB: 61dB Weighted 30ips: AES: 69dB 15ips: NAB: 64dB 7.5ips: NAB: 64dB	Unweighted, 20Hz - 20KHz 30ips: AES: 59dB 15ips: NAB: 56dB 7.5ips: NAB: 56dB Weighted 30ips: AES: 64dB 15ips: NAB: 61dB 7.5ips: NAB: 61dB	Unweighted, 20Hz - 20KHz 30ips: AES: 59dB 15ips: NAB: 56dB 7.5ips: NAB: 56dB Weighted 30ips: AES: 64dB 15ips: NAB: 61dB 7.5ips: NAB: 61dB	Unweighted, 20Hz - 20KHz 30ips: AES: 62dB 15ips: NAB: 59dB 7.5ips: NAB: 59dB Weighted 30ips: AES: 66dB 15ips: NAB: 64dB 7.5ips: NAB: 64dB	Unweighted, 20Hz - 20KHz 30ips: AES: 59dB 15ips: NAB: 56dB 7.5ips: NAB: 56dB Weighted 30ips: AES: 64dB 15ips: NAB: 61dB 7.5ips: NAB: 61dB
Total Harmonic Distortion	30ips: AES < 0.025% 15ips: NAB < 0.035% 7.5ips: NAB < 0.055%	30ips: AES < 0.025% 15ips: NAB < 0.035% 7.5ips: NAB < 0.055%	30ips: AES < 0.025% 15ips: NAB < 0.035% 7.5ips: NAB < 0.055%	30ips: AES < 0.025% 15ips: NAB < 0.035% 7.5ips: NAB < 0.055%	30ips: AES < 0.025% 15ips: NAB < 0.035% 7.5ips: NAB < 0.055%
Bias and Erase Frequency	Bias (400KHz) Erase (100KHz)	Bias (400KHz) Erase (100KHz)	Bias (400KHz) Erase (100KHz)	Bias (400KHz) Erase (100KHz)	Bias (400KHz) Erase (100KHz)
Depth of Erasure	Measured at reference frequency of 1kHz at a reference fluxivity level of 250mV/m. More than 76dB for all audio channels (all formats)	Measured at reference frequency of 1kHz at a reference fluxivity level of 250mV/m. More than 76dB for all audio channels (all formats)	Measured at reference frequency of 1kHz at a reference fluxivity level of 250mV/m. More than 76dB for all audio channels (all formats)	Measured at reference frequency of 1kHz at a reference fluxivity level of 250mV/m. More than 76dB for all audio channels (all formats)	Measured at reference frequency of 1kHz at a reference fluxivity level of 250mV/m. More than 76dB for all audio channels (all formats)
Amplifier Electronics	Input impedance: 10k ohms balanced Output impedance: 120 ohms balanced Output clipping: +24dB	Input impedance: 10k ohms balanced Output impedance: 120 ohms balanced Output clipping: +24dB	Input impedance: 10k ohms balanced Output impedance: 120 ohms balanced Output clipping: +24dB	Input impedance: 10k ohms balanced Output impedance: 120 ohms balanced Output clipping: +24dB	Input impedance: 10k ohms balanced Output impedance: 120 ohms balanced Output clipping: +24dB
Tape Speeds	7.5, 15 and 30 ips (11.05cm/sec, 38.1cm/sec, 76.2cm/sec)	7.5, 15 and 30 ips (11.05cm/sec, 38.1cm/sec, 76.2cm/sec)	7.5, 15 and 30 ips (11.05cm/sec, 38.1cm/sec, 76.2cm/sec)	7.5, 15 and 30 ips (11.05cm/sec, 38.1cm/sec, 76.2cm/sec)	7.5, 15 and 30 ips (11.05cm/sec, 38.1cm/sec, 76.2cm/sec)
Configurations	1 track, 1/4"	2 track, NAB 1/4"	2 track, NAB 1/4"	2 track, NAB 1/4"	2 track, NAB 1/4" IEC Center Track
Reel Sizes	Available with NAB A: (3.5, 7") NAB B: (10 1/2"), DIN: 1,000m (11 1/2") NAB: (12 1/2")	Available with NAB A: (3.5, 7") NAB B: (10 1/2"), DIN: 1,000m (11 1/2") NAB: (12 1/2")	Available with NAB A: (3.5, 7") NAB B: (10 1/2"), DIN: 1,000m (11 1/2") NAB: (12 1/2")	Available with NAB A: (3.5, 7") NAB B: (10 1/2"), DIN: 1,000m (11 1/2") NAB: (12 1/2")	Available with NAB A: (3.5, 7") NAB B: (10 1/2"), DIN: 1,000m (11 1/2") NAB: (12 1/2")
Tape Tension	120 grams (nominal)	120 grams (nominal)	120 grams (nominal)	120 grams (nominal)	120 grams (nominal)
Long Term Speed Stability	More than 0.02%	More than 0.02%	More than 0.02%	More than 0.02%	More than 0.02%
Wow and Flutter	30ips: < 0.025% (DIN 45507 Weighted) 15ips: < 0.035% (DIN 45507 Weighted) 7.5ips: < 0.055% (DIN 45507 Weighted)	30ips: < 0.025% (DIN 45507 Weighted) 15ips: < 0.035% (DIN 45507 Weighted) 7.5ips: < 0.055% (DIN 45507 Weighted)	30ips: < 0.025% (DIN 45507 Weighted) 15ips: < 0.035% (DIN 45507 Weighted) 7.5ips: < 0.055% (DIN 45507 Weighted)	30ips: < 0.025% (DIN 45507 Weighted) 15ips: < 0.035% (DIN 45507 Weighted) 7.5ips: < 0.055% (DIN 45507 Weighted)	30ips: < 0.025% (DIN 45507 Weighted) 15ips: < 0.035% (DIN 45507 Weighted) 7.5ips: < 0.055% (DIN 45507 Weighted)
Start-up Time	DIN 45507 flutter, (with 10 1/2" reels) 30ips: 500 msec, 0.15% 15ips: 500 msec, 0.15% 7.5ips: 500 msec, 0.15%	DIN 45507 flutter, (with 10 1/2" reels) 30ips: 500 msec, 0.15% 15ips: 500 msec, 0.15% 7.5ips: 500 msec, 0.15%	DIN 45507 flutter, (with 10 1/2" reels) 30ips: 500 msec, 0.15% 15ips: 500 msec, 0.15% 7.5ips: 500 msec, 0.15%	DIN 45507 flutter, (with 10 1/2" reels) 30ips: 500 msec, 0.15% 15ips: 500 msec, 0.15% 7.5ips: 500 msec, 0.15%	DIN 45507 flutter, (with 10 1/2" reels) 30ips: 500 msec, 0.15% 15ips: 500 msec, 0.15% 7.5ips: 500 msec, 0.15%
First Wind Time	2,400 feet: 110 sec. 4,800 feet: 170 sec.	2,400 feet: 110 sec. 4,800 feet: 170 sec.	2,400 feet: 110 sec. 4,800 feet: 170 sec.	2,400 feet: 110 sec. 4,800 feet: 170 sec.	2,400 feet: 110 sec. 4,800 feet: 170 sec.
Spool Wind Time	2,400 feet: 370 sec.	2,400 feet: 370 sec.	2,400 feet: 370 sec.	2,400 feet: 370 sec.	2,400 feet: 370 sec.
MNC (Manual Velocity Control)	From full stop to 1.9 meters per second in either direction	From full stop to 1.9 meters per second in either direction	From full stop to 1.9 meters per second in either direction	From full stop to 1.9 meters per second in either direction	From full stop to 1.9 meters per second in either direction
Power Requirements	AC100/120/220/240V, 50Hz/60Hz selectable	AC100/120/220/240V, 50Hz/60Hz selectable	AC100/120/220/240V, 50Hz/60Hz selectable	AC100/120/220/240V, 50Hz/60Hz selectable	AC100/120/220/240V, 50Hz/60Hz selectable
Power Consumption	Max. 300W	Max. 300W	Max. 300W	Max. 300W	Max. 300W
Fuse Rating	100V/5A (Normal or Fast Blow) 120V/4A (Normal or Fast Blow) 220V, 240V/2A (Normal or Fast Blow)	100V/5A (Normal or Fast Blow) 120V/4A (Normal or Fast Blow) 220V, 240V/2A (Normal or Fast Blow)	100V/5A (Normal or Fast Blow) 120V/4A (Normal or Fast Blow) 220V, 240V/2A (Normal or Fast Blow)	100V/5A (Normal or Fast Blow) 120V/4A (Normal or Fast Blow) 220V, 240V/2A (Normal or Fast Blow)	100V/5A (Normal or Fast Blow) 120V/4A (Normal or Fast Blow) 220V, 240V/2A (Normal or Fast Blow)
Operating Temperature	+5°C to +35°C (+41°F to 95°F)	+5°C to +35°C (+41°F to 95°F)	+5°C to +35°C (+41°F to 95°F)	+5°C to +35°C (+41°F to 95°F)	+5°C to +35°C (+41°F to 95°F)
Weight	Approx. 46.26kg (91 lb) with SU-14 stand	Approx. 46.26kg (91 lb) with SU-14 stand	Approx. 46.26kg (91 lb) with SU-14 stand	Approx. 46.26kg (91 lb) with SU-14 stand	Approx. 46.26kg (91 lb) with SU-14 stand
Supplied Accessories	Fuse set x 1 set, AC power cord x 1, Reel clamper x 2, Head plate cover x 1, Extender board x 1, User labels x 50 copies, 1/4" x 10 1/2" tape x 1, 1/4" x 10 1/2" empty reel x 1	Fuse set x 1 set, AC power cord x 1, Reel clamper x 2, Head plate cover x 1, Extender board x 1, User labels x 50 copies, 1/4" x 10 1/2" tape x 1, 1/4" x 10 1/2" empty reel x 1	Fuse set x 1 set, AC power cord x 1, Reel clamper x 2, Head plate cover x 1, Extender board x 1, User labels x 50 copies, 1/4" x 10 1/2" tape x 1, 1/4" x 10 1/2" empty reel x 1	Fuse set x 1 set, AC power cord x 1, Reel clamper x 2, Head plate cover x 1, Extender board x 1, User labels x 50 copies, 1/4" x 10 1/2" tape x 1, 1/4" x 10 1/2" empty reel x 1	Fuse set x 1 set, AC power cord x 1, Reel clamper x 2, Head plate cover x 1, Extender board x 1, User labels x 50 copies, 1/4" x 10 1/2" tape x 1, 1/4" x 10 1/2" empty reel x 1



APR-5001
The APR-5001 full track mono version is suitable for on-air sound effect use by broadcasters.



APR-5002
The APR-5002 2-channel version is designed as a multi-purpose master recorder for broadcasters, recording studios, and post production houses.

APR-5002D
The APR-5002D is the DIN head version of the APR-5002 2-channel recorder/reproducer.

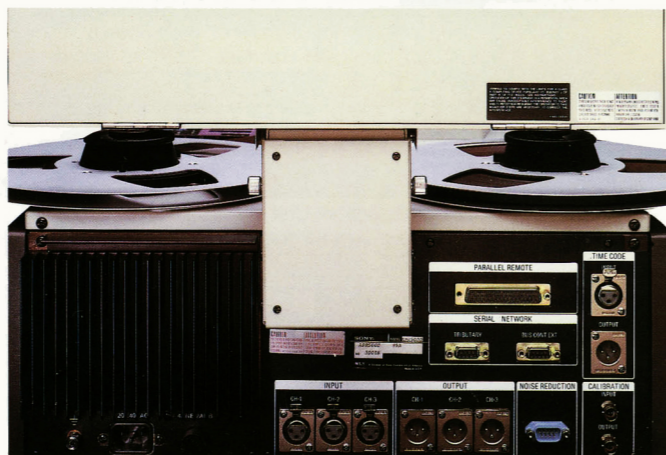
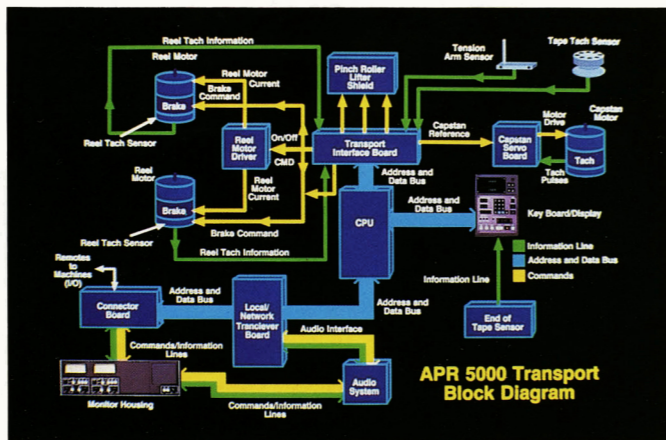
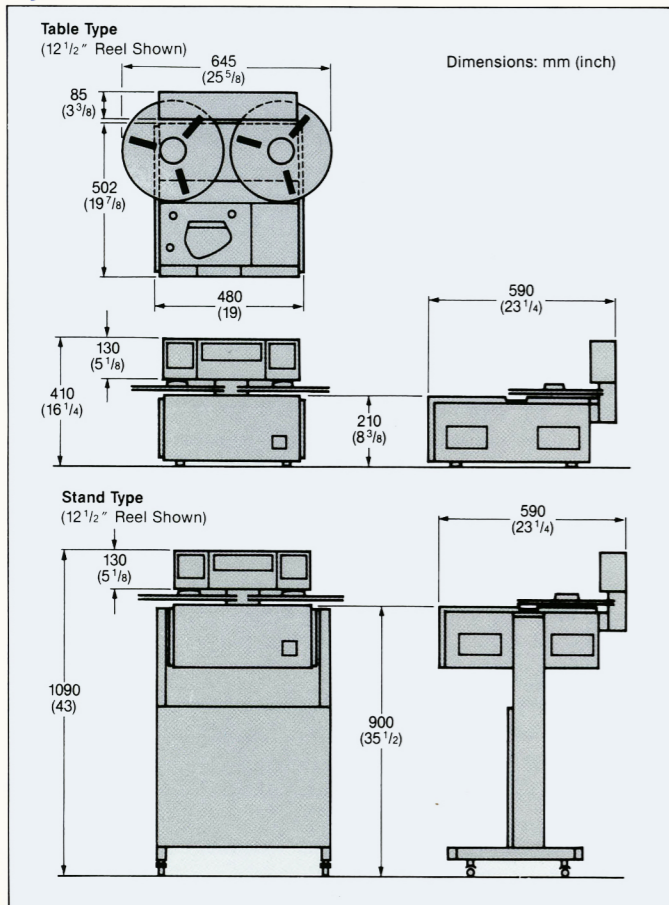


APR-5002H
The APR-5002H is a 1/2" tape width version of the APR-5002 2-channel recorder/reproducer. It is designed as a high-quality master recorder for recording studios.



APR-5003
The APR-5003 IEC center track time code version is specially targeted to meet the requirements of broadcasters and post production houses. Featuring the ability to generate, record and reproduce a time code track in the "guard band" found on NAB standard 2-track recordings, the APR-5003 is ideal for lock up to VTR's or other ATR's. The AutoLocator readouts on this machine show time code in hours, minutes, seconds and frames. AutoLocate routines can be performed accurately to time code addresses. Microprocessor intelligence ensures the coincidence of code to recorded/reproduced audio, and serial control capability makes the APR-5003 ideal for integration into video editing systems.

System Dimensions



APR-5003