

PR99 Broadcast Versions

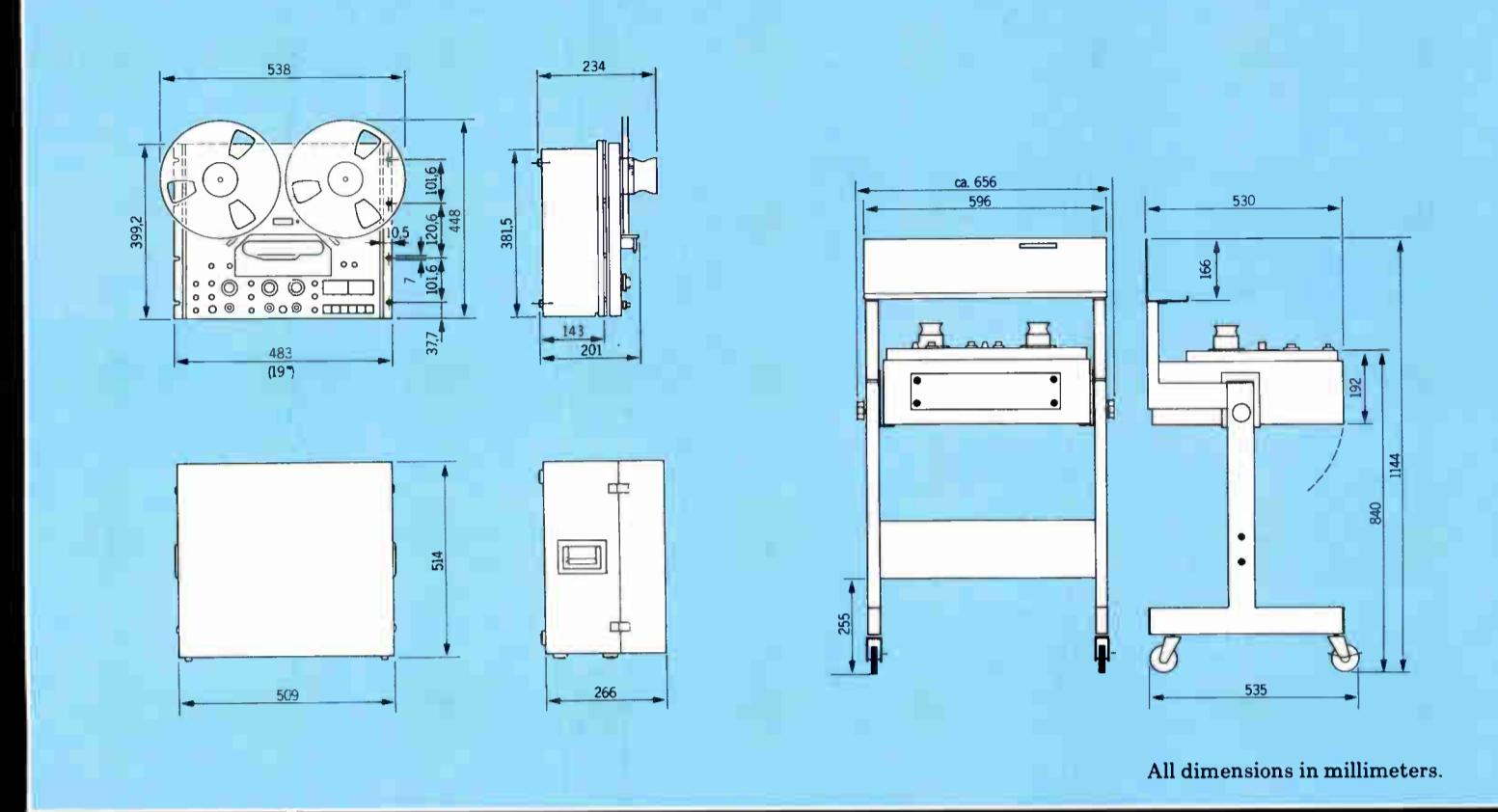
PR99 MK II Full-Track Mono



- Separate meters for simultaneous input and output reading.
 - Standard 6.3 mm track width.
 - Two input channels.
 - Echo capability.

PR00 Reproduce Only

- Ideal for broadcast automation.
 - 25 Hz sensor with switchable filter.
 - LED indicator for 25 Hz tone.
 - Front panel controls for repro level, HF equalization (separate for high and low speeds), and EOM stop delay time.
 - Audio output through XLR or multipin connectors.
 - Status and remote signals available through multipin connector.



2 track NS NAB (3.75 - 7.5 ips)

2 track HS NAB (7.5 - 15 ips)	No 13502
2 track HS CCIR (7.5 - 15 ips)	No 13506
Mono NS NAB (3.75 - 7.5 ips)	
Full-track	No 13501
Mono HS NAB (7.5 - 15 ips)	
Full-track	No 13503
Mono HS CCIR (7.5 - 15 ips)	
Full-track	No 13504
2 track NS NAB (3.75 - 7.5 ips)	
Reproduce only	No 13203
2 track HS NAB (7.5 - 15 ips)	
Reproduce only	No 13303
2 track HS CCIR (7.5 - 15 ips)	
Reproduce only	No 13302

Technical Data

	3.75 – 7.5 ips NAB	7.5 – 15 ips NAB or CCIR (IEC)		3.75 – 7.5 ips NAB	7.5 – 15 ips NAB or CCIR (IEC)	
Tape transport mechanism:	3 motor tape drive, 2 AC driven spooling motors. 1 AC driven capstan motor, servo controlled					
Tape speeds:	3.75 ips and 7.5 ips electronic change-over ± 0.2% from: 2.5 ... 11 ips	7.5 ips and 15 ips electronic change-over ± 0.2% from: 5 ... 22 ips				
Tolerance from nominal: Speed variable:	± 0.2%	± 0.2%				
Wow and flutter: (DIN 45507/ consistent with IEEE standard 193-1971)	at 3.75 ips less than 0.1% at 7.5 ips less than 0.08 %	at 7.5 ips less than 0.08 % at 15 ips less than 0.06 %				
Tape slip:	max 0.2 %					
Reel size:	up to 10.5 inch diameter (min. hub diameter 2.36 inches), tape tension switchable (for small hub diameters)					
Winding time:	approx. 120 s for 2500 ft of tape					
Tape transport control:	Integrated control logic with tape motion sensor provides for any desired transition between different operating modes. Contactless electronic switching of all motors. Remote control of all functions and electric timer operation are possible. Fader start facilities. Tape dump mode.					
Tape Counter:	Tolerance ± 0.5%, real time indication in hours, minutes and seconds, Zero Loc, Addr Loc and Automatic Repeat Mode.					
Equalization:	at 3.75 ips: NAB 90-3180 μ sec 7.5 ips: NAB 50-3180 μ sec	at 7.5 ips: NAB 50-3180 μ sec CCIR 70 μ sec 15 ips: NAB 50-3180 μ sec CCIR 35 μ sec				
Frequency response: Reproduce (using MRL test tape NAB)	at 3.75 ips: 31.5 Hz ... 10 kHz ± 2 dB at 7.5 ips: 31.5 Hz ... 20 kHz ± 2 dB	at 7.5 ips: 31.5 Hz ... 20 kHz ± 2 dB at 15 ips: 31.5 Hz ... 20 kHz ± 2 dB				
Frequency response: Record/Reproduce	at 3.75 ips: 30 Hz ... 16 kHz +2/-3 dB 50 Hz ... 100 kHz ± 1.5 dB at 7.5 ips: 30 Hz ... 20 kHz +2/-3 dB 50 Hz ... 15 kHz ± 1.5 dB	at 7.5 ips: 30 Hz ... 20 kHz +2/-3 dB 50 Hz ... 15 kHz ± 1.5 dB at 15 ips: 30 Hz ... 22 kHz +2/-3 dB 50 Hz ... 18 kHz ± 1.5 dB				
Frequ. response of Guide Track reproduction:	at 3.75 ips: 100 Hz ... 6 kHz +2/-4 dB at 7.5 ips: 100 Hz ... 8 kHz +2/-4 dB	at 7.5 ips: 100 Hz ... 8 kHz +2/-4 dB at 15 ips: 100 Hz ... 12 kHz +2/-4 dB				
Operating level:	255 nWb/m 0 VU					
Level metering:	VU meter in accordance with ASA standard plus LED peak level indicators (6 dB above operating level, adjustable)					
Distortion, measured via tape:	at 0 VU 0 VU + 6 dB (nWb/m): (255) (510) at 3.75 ips: <0.4% <2.5% at 7.5 ips: <0.3% <1.5%	at 0 VU 0 VU + 6 dB (nWb/m): (255) (510) at 7.5 ips: <0.3% <1.5% at 15 ips: <0.3% <1.5%				
Signal to noise ratio: (measured via tape)						
2-Track Stereo / CCIR-Versions:	Peak value, CCIR 468 weighted 510 nWb/m					
1020 nWb/m			at 7.5 ips > 52 dB at 15 ips > 54 dB			
ASA-A (IEC 179) weighted 510 nWb/m			at 7.5 ips > 58 dB at 15 ips > 60 dB			
1020 nWb/m			at 7.5 ips > 64 dB at 15 ips > 66 dB			
2-Track Stereo / NAB-Versions:	ASA-A (IEC 179) weighted 510 nWb/m		at 7.5 ips > 70 dB at 15 ips > 72 dB			
1020 nWb/m			at 7.5 ips > 72 dB at 15 ips > 72 dB			
Additional Data for:						
Fulltrack Mono / CCIR-Versions:	Peak value, CCIR 468 weighted 510 nWb/m					
1020 nWb/m			at 7.5 ips > 56 dB at 15 ips > 58 dB			
ASA-A (IEC 179) weighted 510 nWb/m			at 7.5 ips > 62 dB at 15 ips > 64 dB			
1020 nWb/m			at 7.5 ips > 68 dB at 15 ips > 70 dB			
Fulltrack Mono / NAB-Versions:	ASA-A (IEC 179) weighted 510 nWb/m		at 7.5 ips > 74 dB at 15 ips > 76 dB			
1020 nWb/m			at 7.5 ips > 76 dB at 15 ips > 76 dB			
Connectors for:						
Electric current supply: (voltage selector)	100V, 120V, 140V, 200V, 220V, 240V 50 Hz ... 60 Hz, max. 90 watts					
Primary power fuse:	100V ... 140V: T1A (slow blowing) 200V ... 240V: T0.5A (slow blowing)					
Weight:	40 lbs. 12 oz. (18.5 kg)					
Ambient Temp. Range:	+40°F (+7°C) to +104°F (+40°C)					
Working position:	Any, between horizontal and vertical					
Crosstalk: (at 1000 Hz)	Stereophonic: better than 45 dB Monophonic: better than 60 dB					
Erase depth:	at 7.5 ips better than 75 dB (1 kHz)					
Inputs per channel: (0 dBu ± 0.775 V)	Line inputs balanced (input impedance ≥ 5 kohms):					
Calibrated:	+4 dBu (adjustable -10 ... +10 dBu, referred to operating level)					
Uncalibrated:	Sensitivity ext. variable up to 10 dB above calibrated input Max. Line Input Level: +22 dBu (> 40 Hz)					
Microphone inputs unbalanced (input impedance 100 kohms):	MIC LO: -70 dBu (max. -24 dBu) MIC HI: -42 dBu (max. +4 dBu)					
Microphone inputs balanced (input impedance > 1.2 kohms; 40 Hz ... 15 kHz):	MIC LO: -82 dBu (max. -36 dBu) MIC HI: -54 dBu (max. -7 dBu)					
Line outputs balanced (source impedance 50 ohms):						
Calibrated:	+4 dBu (load 600 ohms) (adjustable -20 ... +9 dBu, referred to operating level)					
Uncalibrated:	Output level ext. variable up to 10 dB above calibrated output Max. Line Output Level: +22 dBu/600 ohms +20 dBu/200 ohms					
PHONES:	max. 5.6V, internal resistance 220 ohms, short-circuit proof.					
STUDER REVOX AMERICA, INC. 1425 Elm Hill Pike Nashville Tennessee 37210						
Printed in Switzerland by WILLI STUDER AG, 10.18.4921 (0884) Copyright by WILLI STUDER AG, CH-8105 Regensdorf-Zurich, Switzerland						

1425 Elm Hill Pike
Nashville
Tennessee 37210

Copyright by WILLI STUDER AG,
CH-8105 Regensdorf-Zurich,
Switzerland

STUDER REVOX PR 99 MKII



The Choice for Cost-Effective Performance

The REVOX PR99 MK II is a versatile, compact, and fully professional audio recorder. It offers a long list of operating features for production flexibility, yet it in no way compromises a commitment to engineering excellence which has made STUDER REVOX the world's most respected name in audio recording. PR99 MK II is a practical alternative to more expensive machines in a variety of applications.

Broadcast: On-air studio playback, production, OB vans, portable remotes, and automation systems. Standard and Reproduce-Only versions.

Recording Studio: Ideal for dubbing, slap echo, and other general uses. An excellent mastering deck for small 4 and 8-track studios.

Remote Recording: An ideal lightweight package. Transport case, monitor panel, and balanced mic inputs available.

Educational Institutions: An excellent choice when ruggedness, dependability, and ease of servicing are important.

Industrial, AV: Wide range of options and multiple input/output modes provide exceptional flexibility.

Designed in Switzerland and manufactured in West Germany, the PR99 MK II draws on the same engineering experience and technology that have made STUDER recorders the world standard for excellence. No matter what your application, a PR99 MK II will provide a level of performance you'd expect only from a higher-priced recorder.

The Choice for Operating Features

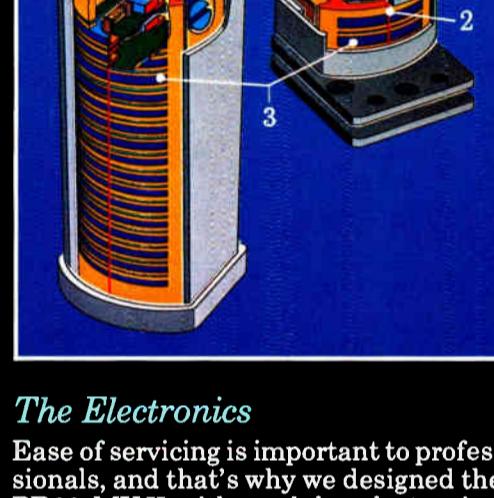
The PR99 MK II incorporates all the features required for most professional applications. For special needs, a wide variety of options are available. Now equipped with

- 1 Connections for faderstart, remote control (serial and parallel), external vari-speed, and monitor panel.
- 2 Balanced and floating inputs and outputs.
- 3 Sound heads mounted above flat faceplate for easy editing.
- 4 Tape cutter and splicing block.
- 5 TAPE DUMP button for waste basket mode (right take-up motor off).
- 6 ASA Standard VU meters with LED peak indicators (thresholds individually adjustable).
- 7 READY/SAFE switch protects against accidental erasures. Status indicator readily visible.
- 8 Full logic transport control with contactless motion sensing. Tapes protected from damage due to operator errors.
- 9 Selector switch for high and low impedance microphone, line input, off (input short), and track transfer. Multiple production possibilities when used in conjunction with Self-Sync feature [18].
- 10 Calibrated input levels. In the calibrated mode, inputs are set to an internally adjustable level. In the uncalibrated mode, an extra 10 dB of gain is available through the front panel control.
- 11 Microphone inputs, switchable for high or low impedance. Balanced XLR inputs available as option.
- 12 Output selector for switching output to mono, stereo, reverse, channel 1 or channel 2.

- 13 Calibrated output levels. In the calibrated mode, line output is internally adjustable in reference to operating level. In uncalibrated mode, an additional 10 dB of gain may be added with front panel control.
- 14 Adjustable headphone output. (Headphone level remains variable in calibrated output mode.)
- 15 Rack mount flange and metal cage standard.
- 16 Tape speed options: 3 3/4 - 7 1/2 (NAB) or 7 1/2 - 15 (NAB or CCIR). Modification for 15/16 - 1 7/8 - 3 3/4 on request.
- 17 Edit mode switch defeats tape lifters and latching function of fast wind buttons. Permits quick location of audio cues.
- 18 Two-way self-sync allows sync monitoring off record head while recording on other channel.
- 19 Real-time counter with resolution to the exact second. Zero Locate, Address Locate, and Repeat(loop) function.
- 20 Universal power supply for connection to line current anywhere in the world.
- 21 Variable speed control with ± 7 half-tone range.

The Sound Heads

Record and playback heads for the PR99 MK II, made in our own factory, are machined to the same tolerance as the heads we make for our STUDER multi-track recorders. The cutaway diagram shows the construction details of a PR99 MK II 2-track head and a STUDER A80 16-track head.



1. The core shell is machined to extreme dimensional accuracy for uniform track-to-track response.
2. The non-magnetic gap of the playback head is 2 μ m wide, 20 times thinner than the average human hair.
3. Core laminations are made from a high permeability magnetic material to minimize conversion losses. This contributes to the PR99 MK II's remarkably low noise and distortion. Long pole pieces keep the frequency response flat down to the 30 Hz region. Also, the wear characteristics of the shell and core are closely matched to extend head life.

At STUDER REVOX, we've been designing and building magnetic heads for audio recorders since 1949. This experience can be audible. In some demanding situations, the quality of our heads could spell the difference between a good recording and a superb recording.



The Electronics

Ease of servicing is important to professionals, and that's why we designed the PR99 MK II with modular electronics. Easy access to all PC cards is provided, and the trim pots for audio set-up are clearly labelled and logically ordered. Treble EQ adjustments for playback are now provided for each speed and each channel. The specifications of the PR99 MK II speak for themselves. Input amplifiers allow a minimum overload margin of

40 dB. Active, linear output stages in the record amplifiers deliver up to 22 dB of headroom. At 0 VU the PR99 MK II has exceptionally low distortion, with plenty of "breathing room" left beyond this point.

For click-free initiation of record, the PR99 MK II has controlled turn-on of the bias oscillator. Also, all inputs and outputs are muted when power is turned on or off.

All circuit components in the PR99 MK II were selected for long-term reliability. This assures consistent performance for years to come.



Counter, Address and Zero Locate

A microprocessor controlled real time counter gives elapsed tape time in hours, minutes, and seconds from -9.59.59 to 29.59.59. Counter error is less than 0.5%, and the microprocessor automatically recomputes the time displayed on the LED counter when you change tape speeds.

Pressing the Z-LOC (Zero Locate) button fast winds to the zero counter reading. Pressing A-LOC (Address Locate) fast winds to a tape time programmed into memory. This address may be entered from the keyboard or transferred from a counter reading. Programming of

Address Locate is possible while tape is in motion ("on the fly"). When counter is reset to zero (RESET), the tape location in Address Locate memory is automatically recomputed to the corresponding new value.

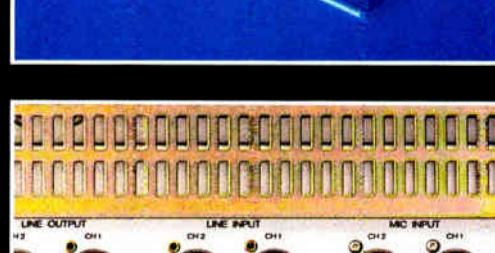
Pressing the Repeat (RPT) button initiates a loop mode: tape fast winds to the lower memory position (zero or negative address), plays to the higher position, re-winds, and continues in this cycle until a new command is given.

The Solid Choice for Flexible Options

All-steel console

(Console No 34503/cabinet for console No 34504/reel shelf No 34505)

- Rigid welded steel frame
- Steel inside cabinet panels for extra durability
- Operating angle of 30°, 45°, or horizontal
- Tilt can be changed in seconds without tools
- Locking casters
- Utility shelf (optional)
- Quick access to alignment controls through front panel
- Space for monitor panel



Compact monitor panel

(No 34506 for mono machine/No 34507 for stereo machine)

- Mounts in console, case, or standard 19" rack
- Installation with two screws and one 7-prong DIN plug
- Power amplifier, volume control and 6" oval speaker
- Track selector switch

Vari-speed control

(No 34237)

- Coarse adjustment ± 7 half-tones
- Fine adjustment ± 1 half-tone
- 6 ft. cable

Remote control

(No 34227)

- All PR99 transport functions plus repeat
- Locking pause button
- Selector switch for timer operation
- 32 ft. cable

Balanced microphone inputs

(No 77001)

- Transformer isolated
- Input impedance: >1.2 kohms, 40 Hz ... 15 kHz
- Mic lo position: -82 dBu (max. -36 dBu)
- Mic hi position: -54 dBu (max. -7 dBu)

DIN pancake platter

(No 34501)

- Flat metal flange for work with self-supporting tape stacks on European-type hubs.

- Flange is 26.5 cm (10.5 in) in diameter.

AEG hub adapter (No 45018)

Rugged transportation case

(No 34502)

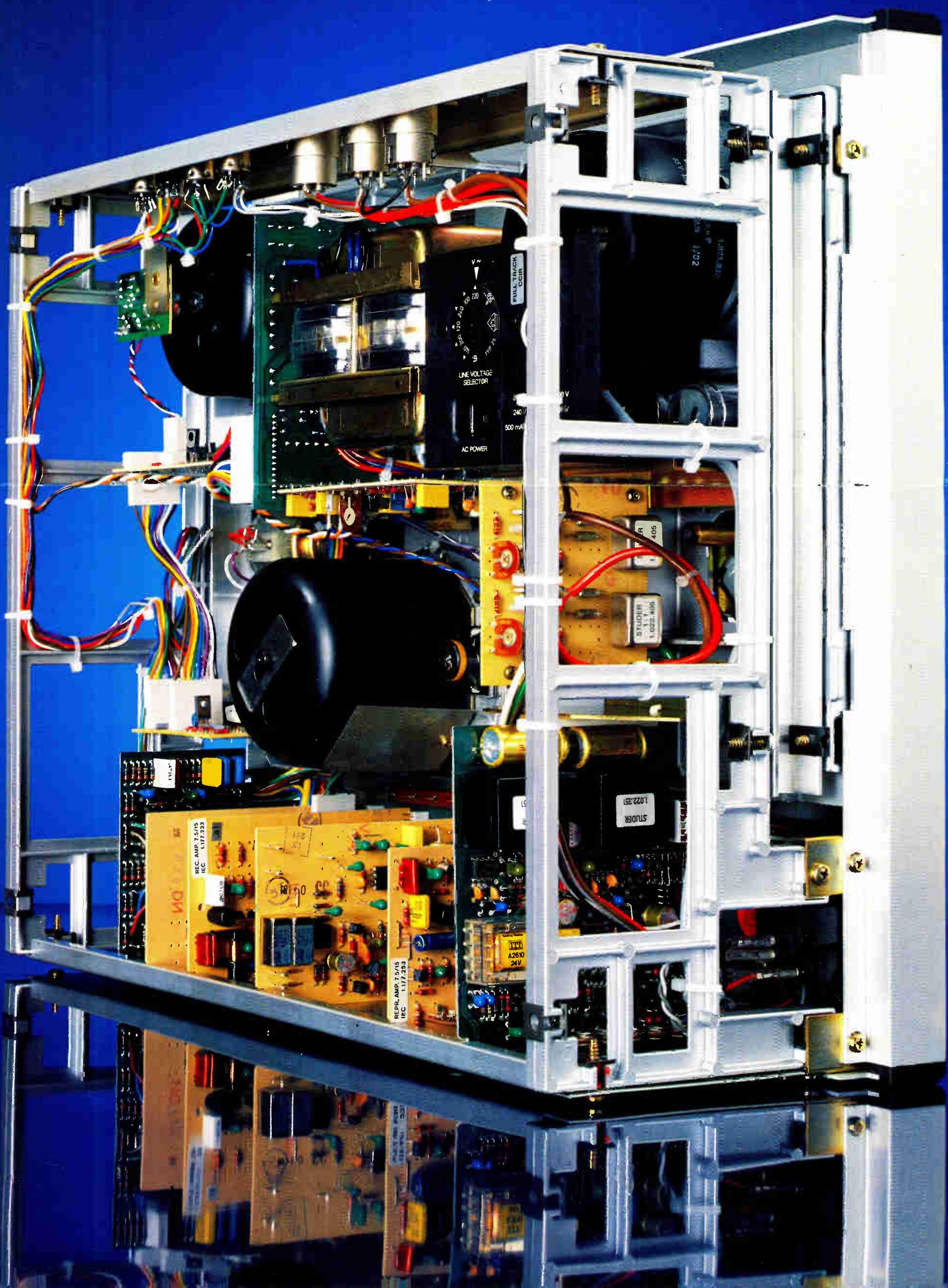
- Welded steel interior side panels
- Snap-on front faceplate cover
- Heavy-duty, spring-loaded handles
- Quick access to all alignment controls
- Adapts to fit console frame
- Space for monitor panel

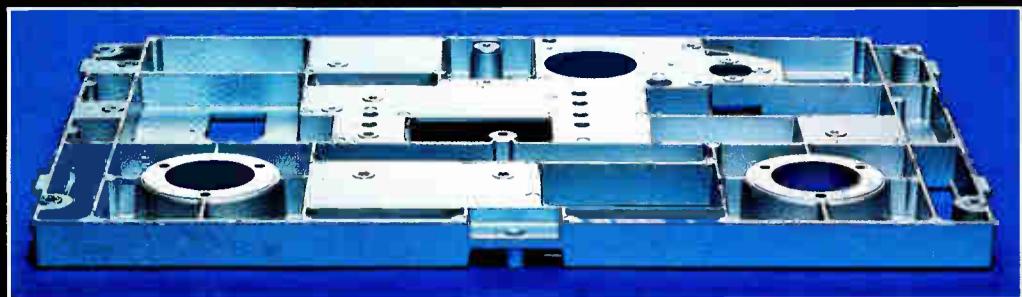


The Solid Choice for Precision Manufacturing and Stringent Quality Control

"Every time you look inside a REVOX or a STUDER product, you know that it was made here, by my company. It's almost as if it carries my signature."

Dr.h.c. Willi Studer





The Transport Chassis

Absolute structural stability is essential for optimum long-term recorder performance. Any bending or warping of the chassis will degrade performance. To assure rigidity, the PR99 MK II chassis is made from aluminium alloy die-castings. Motors and headblock are mounted on a single cross-membered casting with a structural depth of 7/8". Frame

side members are die-cast for stable support of internal components. Making the chassis from rolled metal would be cheaper, of course. But at STUDER REVOX such cost-cutting compromises are not acceptable.



The Motors

Drive motors are crucial to overall recorder performance. That's why we build all PR99 MK II motors – from scratch – in our own factory. Expensive and time-consuming processes are never side-stepped. For example, the capstan shaft is artificially aged, milled to tolerances within 0.001 mm, chrome plated, and sandblasted for minimal tape slip. The spooling motors are controlled by Triac switching. The capstan motor is regulated by a servo system to keep speed totally independent of voltage

and frequency fluctuations in the line current. The servo system monitors capstan speed constantly, immediately correcting minute speed variations.



The Headblock

STUDER REVOX leadership in precision manufacturing is strikingly evident on the headblock assembly. Close tolerances are crucial here. Long-term stability and exact alignment are essential, since a fractional millimeter of misalignment can cost several dBs of audio performance.

The PR99 MK II has a solid die-cast aluminium headblock set on a stable three-point mount. The top is milled for absolute flatness. The finest Swiss and Ger-

man machine tools are used for drilling and tapping. Every screw and shaft is made to stay put – for years.



The Tape Path

For smooth start-up, the PR99 MK II has tape tension arms at both ends of the tape path. Three tape guides keep tape in exact alignment with the heads. The right-hand rolling guide drives the tacho wheel to the real-time counter. The grooved roller surface ensures maximum tape contact – even in fast wind

modes – and thus provides precise data for the counter.

