COURIER

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Febr. 1980

EMT FRANZ GMBH

EMT 948 Broadcast Turntable

EMT Service Seminar

September 24 to 26, 1979

Our readers will remember that we reported quite some times about the EMT Service Seminars in this corner. We remain convinced that these Seminars are of utmost importance for both our customers, and ourselves. Our customers are trained in the newest state of the art and are supplied with the most current information, and we receive very important feedback.

The last seminar was in the English language and included engineers from Finland, Sweden, Denmark, Belgium, France, Italy, and the Near East. The next two seminars to come are already fully booked; however, there will be one English and one German seminar in the fall. If you are interested, please write for details. A card is enclosed.

Who is Who?

When Heinz Kaufmann, 37, reaches for his largest graphite pen and starts to wrinkle his forehead, the muse of the graphic arts walks on tip-toes through the atelier: Mr. Kaufmann is about to design a new EMT ad, or a leaflet, or maybe just this courier issue.

When he started his profession more then twenty years ago, he began as a trainee in graphic design for posters, advertisements, and displays. In 1969, he joined EMT. Since then, he has been responsible for layout, graphic design, and photography in connection with all EMT literature.

His devotion to the arts is such that he also paints as a hobby, and quite a number of his painting, have even been on display in several art exhibitions. When he is tired of wrangling with brush, oil colours, and canvas, he takes off for the Black Forest, where you might find him skiing in winter down the steepest slopes.

Three years after the EMT 950 Studio Turntable was added to the EMT product line as the first unit with direct drive and reversible rotation, this technology has been accepted and adopted in many studios throughout the world. Today, EMT is able to announce another unit developed with the same engineering concepts; its compact dimensions, reduced weight, and significantly lower price, however, make it suitable for all applications not requiring the features of the peak-performing EMT 950.

EMT 948
Broadcast Turntable

Mechanical Construction

Since the space available in many broadcast studios is quite limited, the unit was conceived with a main objective of achieving the minimum width possible. As a result, the mounting position of the tone arm was moved from the area previously employed for EMT turntables to a point farther behind and closer to the center line, thereby maintaining the previous tone arm geometry. This factor affords the immensely practical advantage that the tone arms and above all the pickup cartridges of the various models remain interchangeable.

In addition to the compact size, the greatest possible operational reliability was an obvious conceptual goal. The chassis has been provided with two sturdy handles at the left and right, which not only simplify servicing but also serve the main purpose of protecting the tone arm from accidental hand contact from the side. The tone arm bearing assembly as well as the adjustment lever for the tracking force are also protected by a plexiglass cover, enabling the stylus pressure setting to be checked at any time.

The plexiglass dust cover protects the record and pickup cartridge from unintentional handling when closed. It remains possible, however, to operate the controls. When fully opened, the dust cover provides a location for keeping records and their jackets. The cover can be removed in a simple procedure if better access be required for servicing.

Power indication and illumination of the pickup stylus are provided by a very low-power cold cathode lamp, which requires no starter coil. The lamp affords wide-angle, homogeneous backlighting in which the stylus contour may easily be recognized. Suitable masking prevents glare.

The chassis of the EMT 948 Broadcast Turntable is spring-mounted in its supporting frame to achieve the necessary mechanical absorption characteristics without employing additional external damping measures. Using a newly conceived construction element, a stiff ring, rotational oscillations are inhibited. It is thus possible to design the chassis for relatively low inertia, reducing the total weight of the unit considerably.

Drive System

The platter of the EMT 948 Broadcast Turntable is driven directly, i.e., the platter shaft is rigidly connected to the rotor of the motor, mounted concentrically underneath. The fact that no elastic coupling is employed in the drive system makes possible an extremely rapid platter acceleration, and thus the "quick starts" so necessary for broadcast programming, without the use of an auxiliary platter.

A particularly high-resolution tachometer generator (Fig. 1) is employed to obtain a very accurate pulse frequency from the rotating platter. The high-precision meandering graduations are sensed magnetically. A master reference frequency is produced by a quartz generator and reduced by a divider to the reference frequencies corresponding to the nominal speeds. The appropriate reference frequency and the tachometer

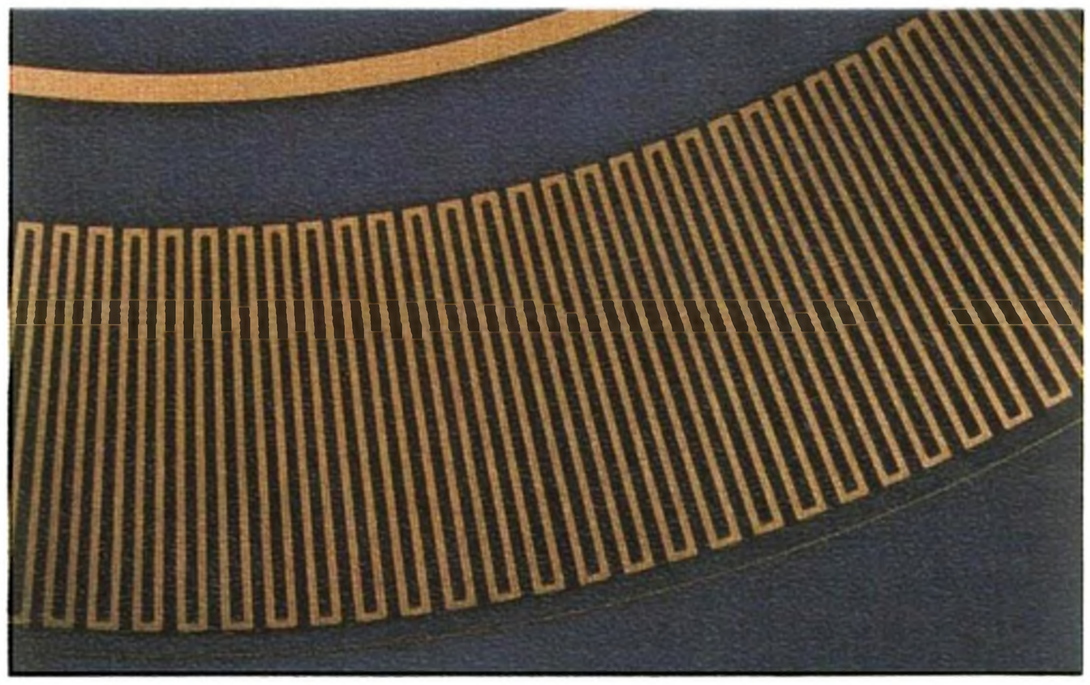


Fig. 1 High-resolution Tachometer

signal are fed through two frequency/voltage converters and compared (block diagram, Fig. 2). This comparison is made on the basis of frequency during starting and according to phase when the speed is synchronized. In this manner, the high-magnitude signal required for rapid starting acceleration is produced as well as the miniscule signals required to correct small phase variations.

If a variable speed be desired instead of the fixed speeds of 33-1/3, 45, and 78 RPM, a voltage controlled oscillator (VCO) is employed as the reference instead of the quartz oscillator. The frequency generated by the VCO is varied by a voltage delivered from an external potentiometer; a logical signal effects the switchover from quartz to VCO.

Operation

Operation of the EMT 948 Broadcast Turntable is particularly easy and thus safe and sure. Three buttons are located on the operating panel at the front of the unit (Fig. 4): a button for the tone arm lift, one for Start and Stop, and a third for reverse rotation of the platter. For the first two buttons, the function is initiated by pressing the first time and released by pressing again; each button illuminates when switched on to afford an unmistakable indication of the operating mode. The Reverse button is momentarily actuated; reverse rotation proceeds only as long as the button is pressed. After release, the platter is stopped, regardless of whether Start or Stop had been initiated before. In this manner, it is very easy to locate an exact cueing point on a record by alternately pressing the Start and Reverse buttons.

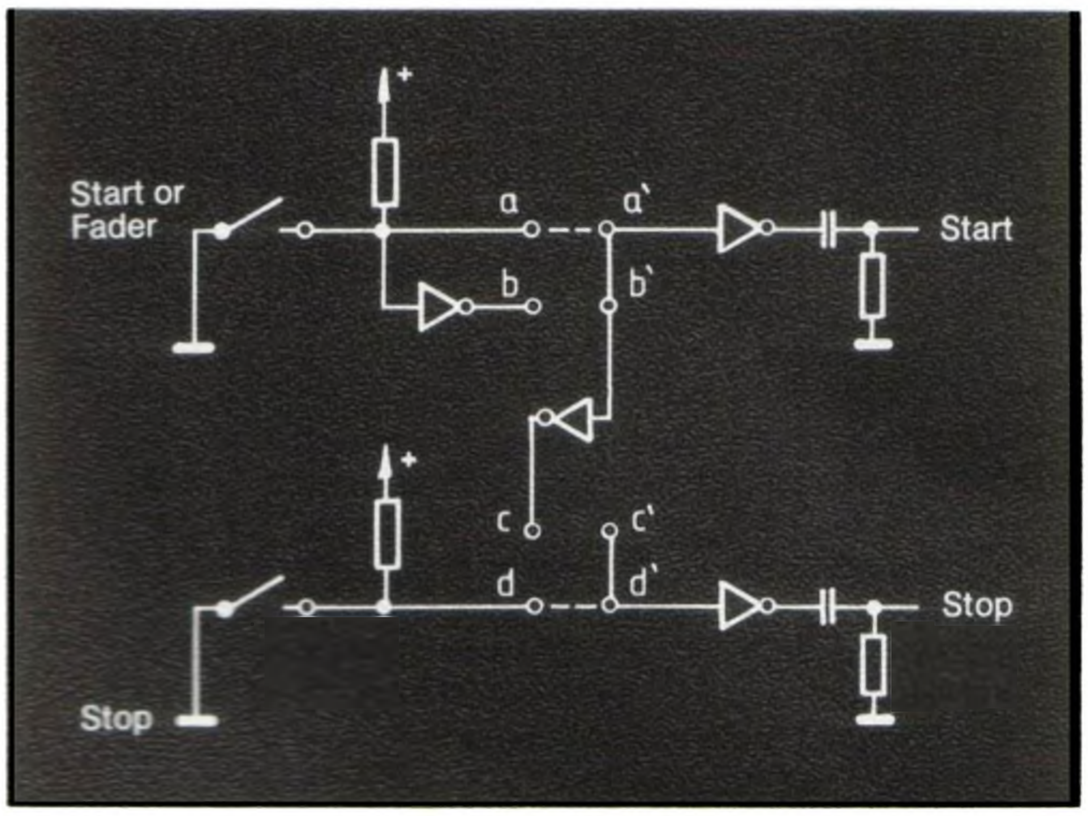
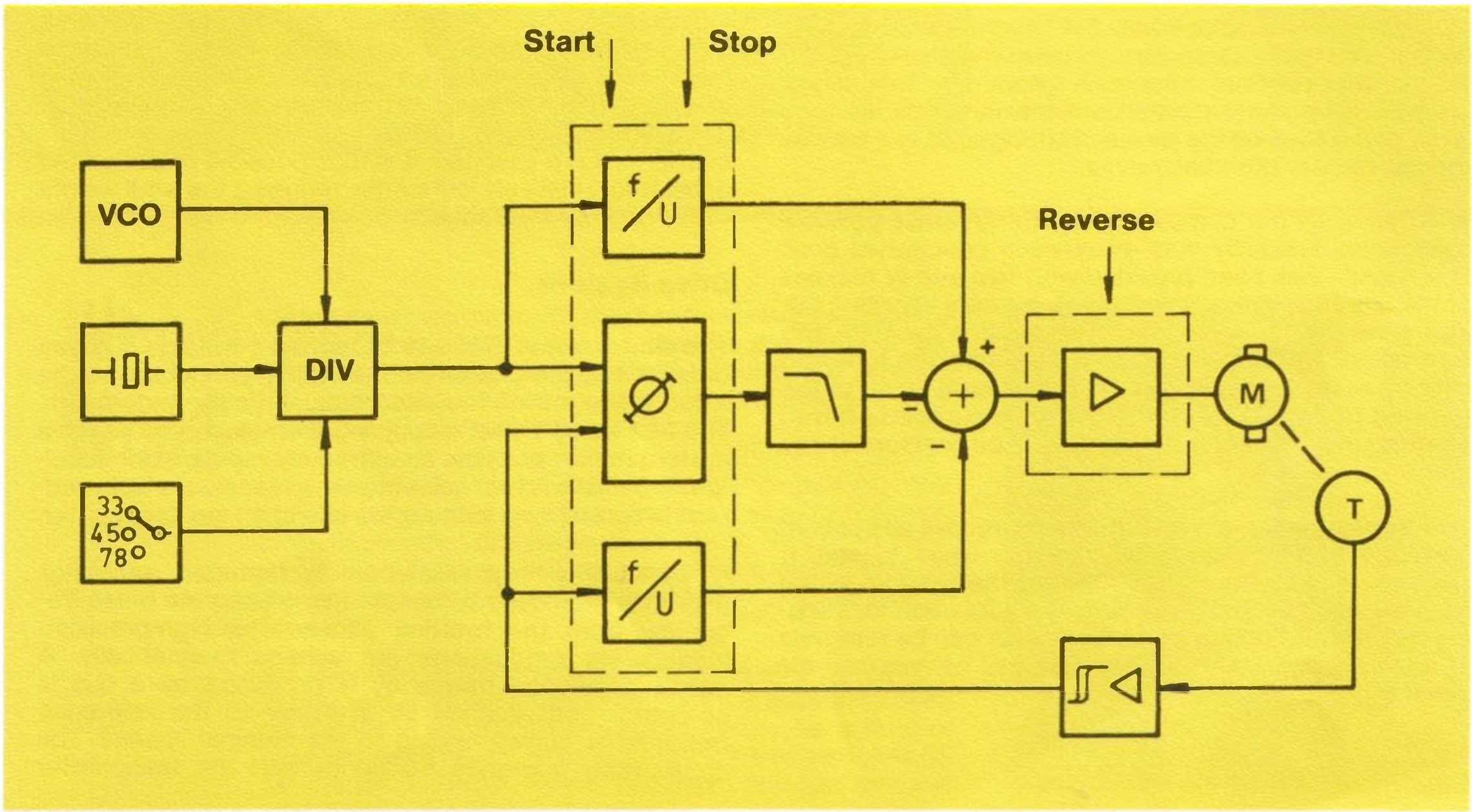


Fig. 3 Interface Programming

Fig. 2 Block Diagram of the Drive System



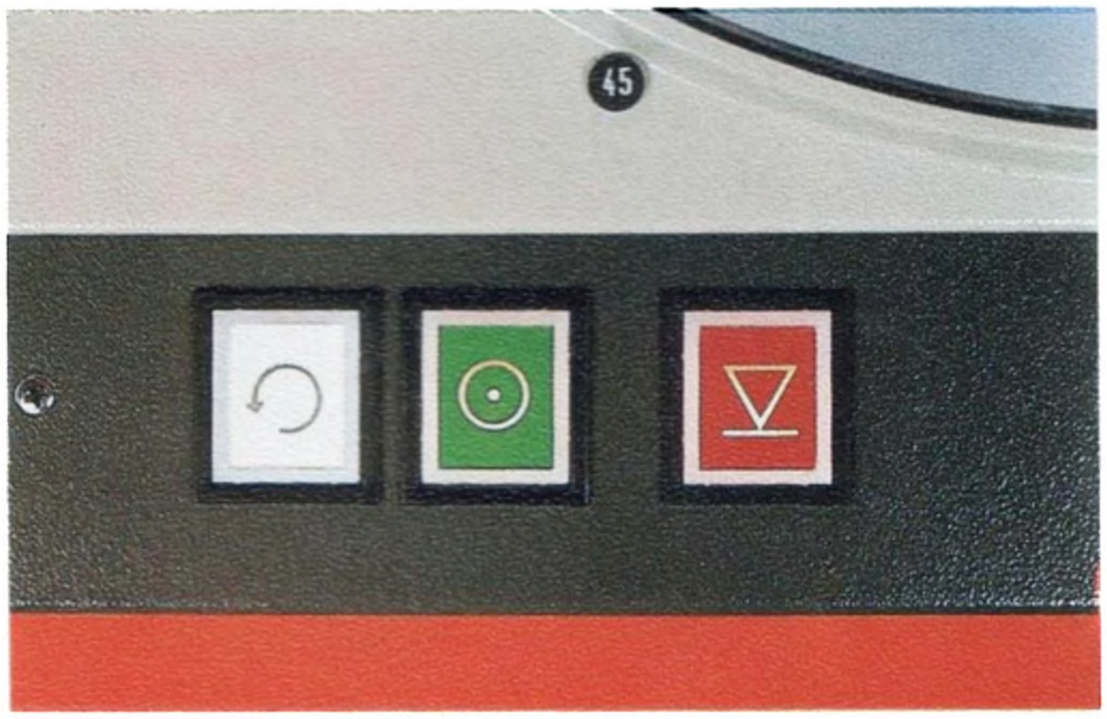


Fig. 4
Panel Push-Buttons

Speed selection is implemented by a three-position rotary switch also located on the operating panel.

Experience has shown that some users or applications demand additional capabilities to those afforded by the minimum complement of operating controls. In recognition of the fact that these additional functions are required by only certain users, the added capabilities are available as "wired options" on the remote control connector, enabling the supplementary functions to be activated from a separate control location (Fig. 5). In addition to Start and Stop, the Mono/Stereo switching and the control and selection of the variable speeds are among the capabilities which can be implemented by remote control.

In addition, the auxiliary contact of the level control on the mixing console can be used for fader starts. Appropriate insertion of a shorting plug on the Interface board enables this contact to function as either a normally open or a normally closed switch (Fig. 3).

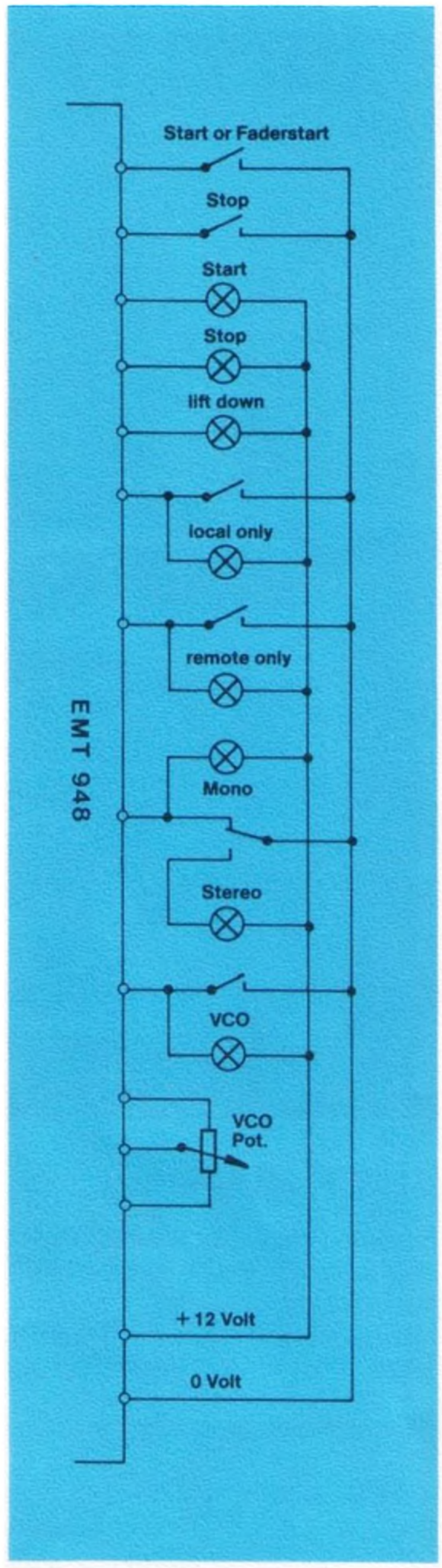
Two pins on the remote control connector determine the operating priority: if the "local only" pin is grounded, the unit can be controlled only from the operating panel; if the "remote only" pin is grounded, only remote control is possible. If neither of the pins is grounded, parallel operation is implemented. This provision enables a control inhibit to be established appropriate to the intended application.

Other connectors on the rear panel enable headphones or — using an external power amplifier powered from the unit — even a monitor loudspeaker to be connected.

Audio Amplifiers

The proven circuitry and construction of the audio amplifiers used in the EMT 950 Direct Drive Studio Turntable were adopted for the EMT 948 as well. The individual boards of the two units are fully compatible and interchangeable.

Fig. 5
Remote Control Connections



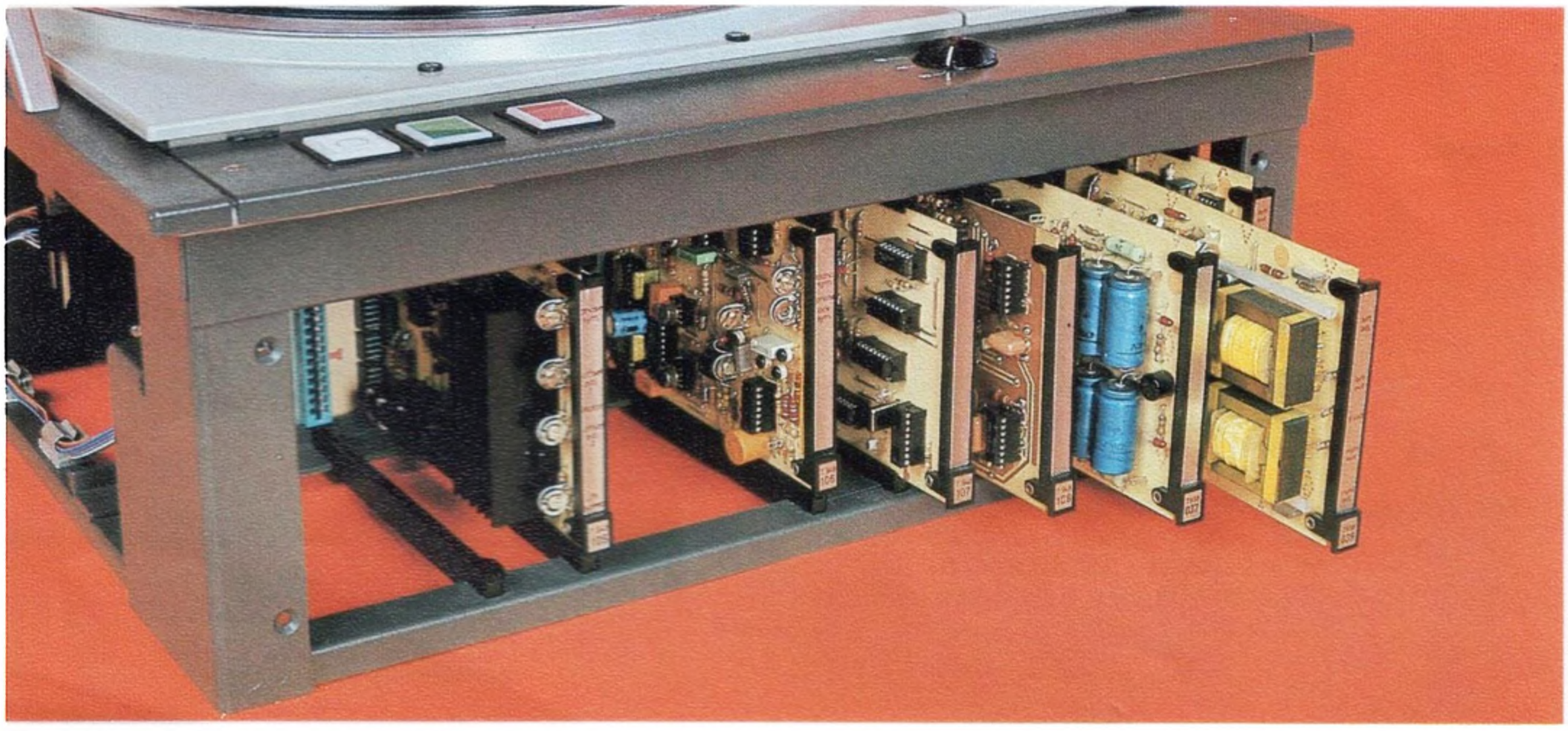
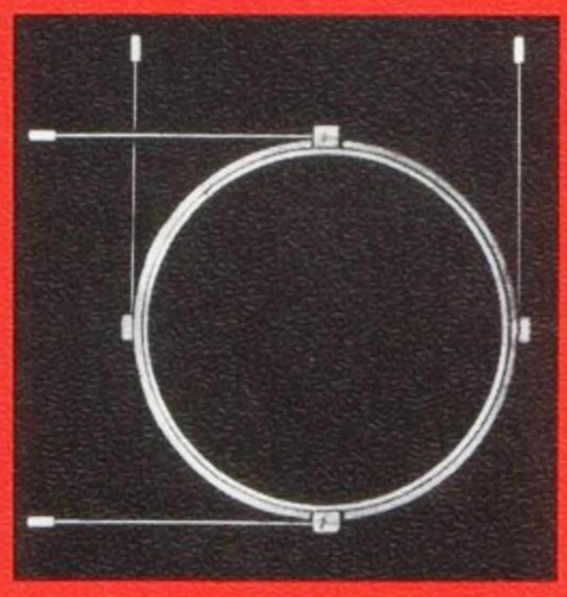
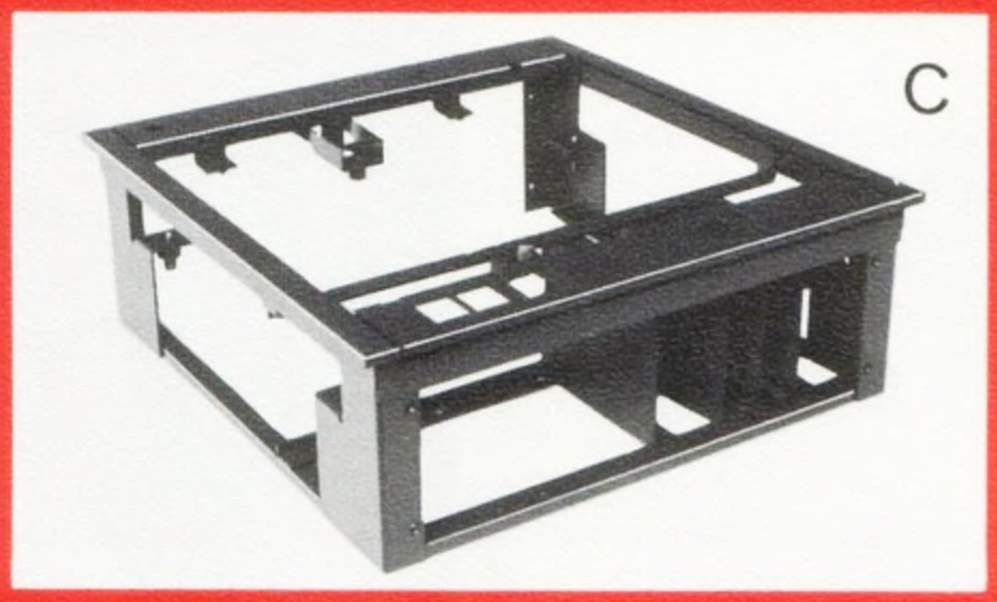


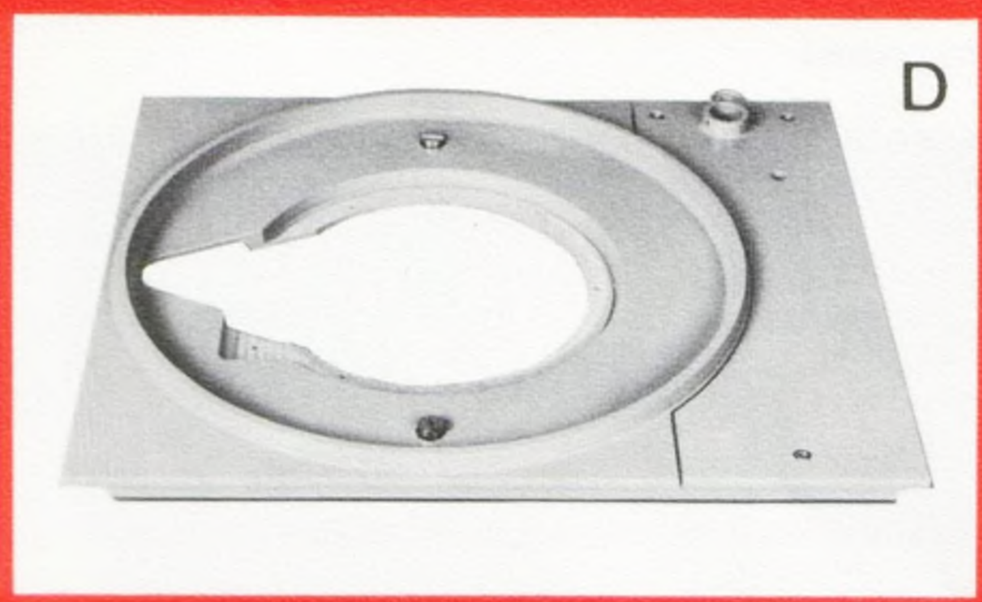
Fig. 6 All printed boards are accessible from front

Suspension System

The heavy chassis (D) is mounted by means of four suspension elements (B) into the frame (C). Suspended systems like this one normally tend to feel "soft" when touched in operation. Thus a stiff ring (A) is inserted; it avoids rotational movements without preventing shock insulation in the lateral direction.







EMT Engineering

Nearly every day we receive a Service Report written by one of our Service Engineers. Needless to say, some have sad stories to relate, some are funnier, and a few are very informative even for parties not directly onvolved in the case. That is the reason for publishing this one:

Complaint:	Customer has two EMT 930's which are "not suitable for stereo transmissions due to high rumble". Visit requested.
Report:	Found two EMT 930's, twelve years old. Rumble measured ca. 36-39 dB. 100 Hz component clearly to be heard in loudspeaker. Strong motor vibrations, noticeable even on speed selector knob outside the machine.
Remedy:	After readjustment of motor condensor (approx. 1,85 µF) rumble down to 47-51 dB! This good value was measured inspite of the fact that the customer has own amplifiers with less bass cut than EMT amplifiers. Rubber idler replaced. Service informations discussed with the customer.
Remarks:	When discussing rumble values, the disk used should be quoted. For instance the QR 2010 used by the customer is approx. 4 dB worse than the DIN disk.

EMT at upcoming exhibitions

25-28 february, 1980	65. AES Convention, London
6-12 july, 1980	Symposium on Theater Technique, Berlin
24-28 august, 1980	HiFi Düsseldorf
12-18 september, 1980	Photokina, Köln
9-15 october, 1980	Interkama, Düsseldorf
17-20 march, 1981	68. AES Convention, Hamburg
25-28 november, 1981	Internationale Tonmeistertagung, Munich

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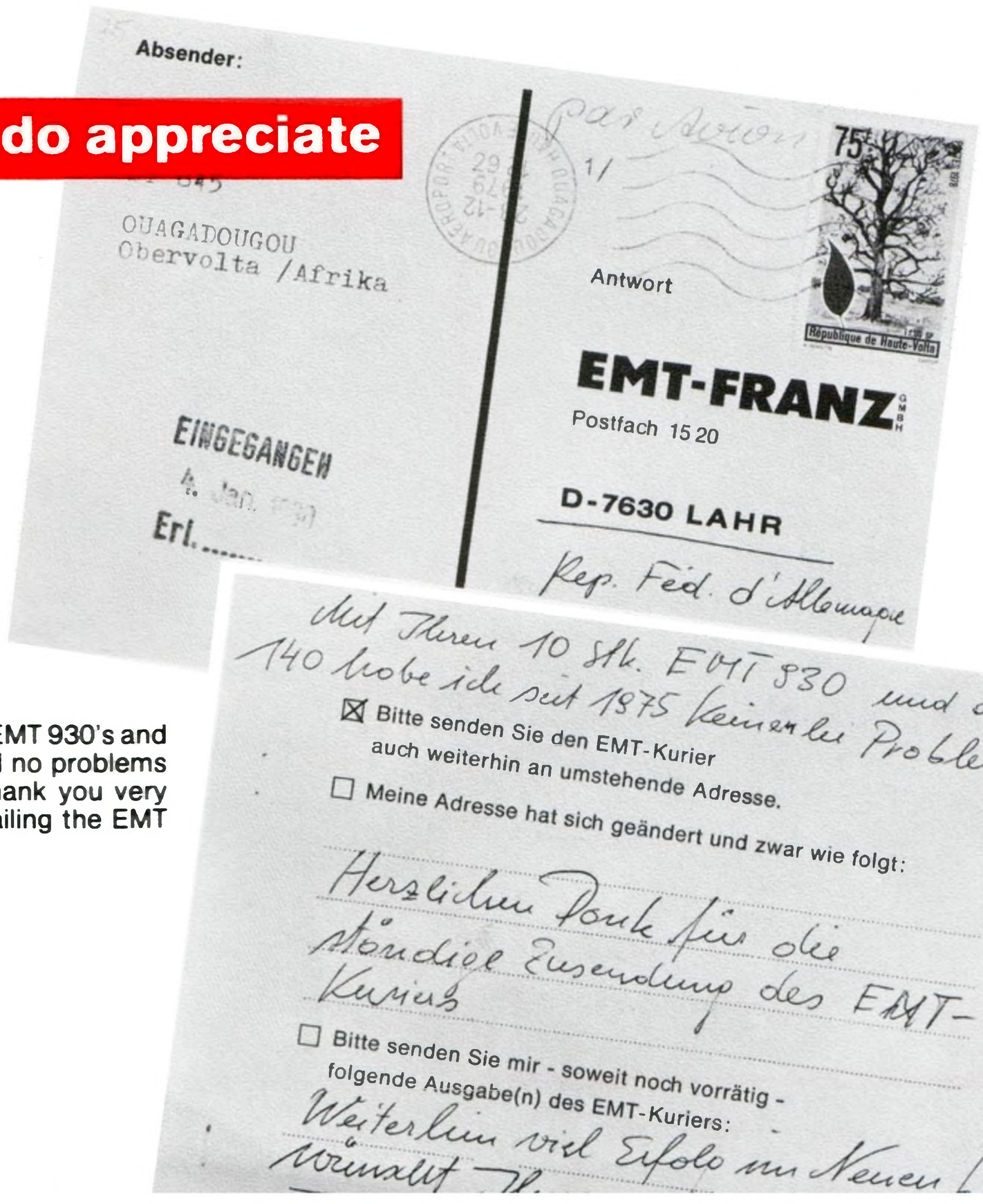
EMT NEWS... EMT

Dust Cover for the EMT 950 Direct Drive Studio Turntable

A perspex dust cover for the EMT 950 is now available (see picture). The cover will fit all models, the standard size and the narrowline version.

Dust cover for the other EMT turntables EMT 928 and EMT 930 are of course also available.

Letters we do appreciate

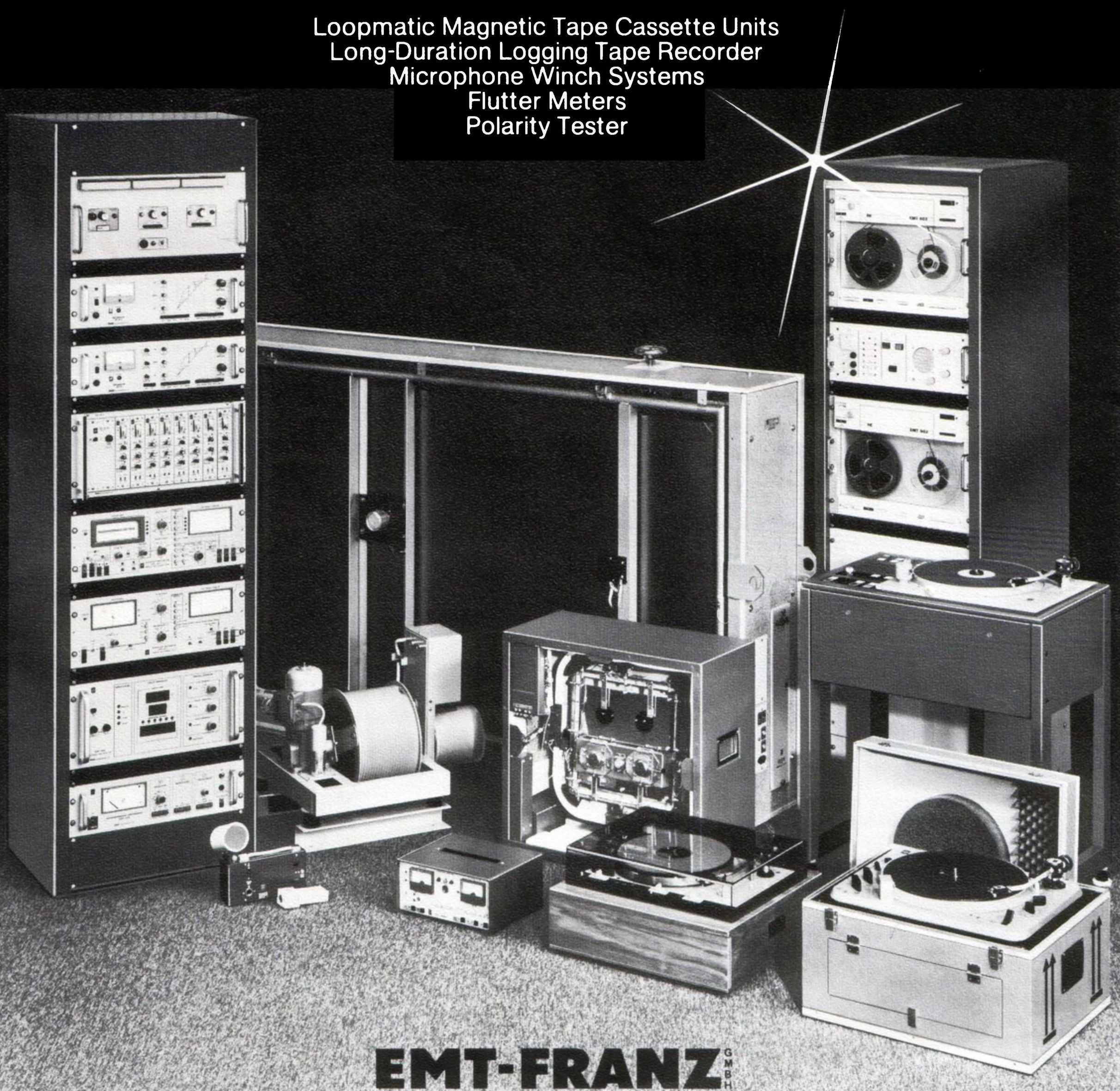


(Translation: I operate 10 EMT 930's and an EMT 140 and have had no problems with them since 1975! Thank you very much for continuously mailing the EMT COURIER).

STUDIO TECHNOLOGY
of world wide fame

Reverberation from the steel plate and the gold foil – or produced digitally – in unrivaled quality. Studio turntables for more than three decades – all still suited for update modifications and compatible – with unexcelled service life and reliability. Specialized electronic units, from the PDM compressor through dynamic noise filters to the transient limiter, digital delay and signal storage units.

Loopmatic Magnetic Tape Cassette Units
Long-Duration Logging Tape Recorder
Microphone Winch Systems
Flutter Meters
Polarity Tester



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