

2.2. WORK ON THE MECHANISM

2.2.1. Removing the cabinet

- Remove the 5 screws with which the bottom plate has been mounted, four screws are located in the corners of the bottom plate. The 5th screw is located in the middle of the bottom plate.
- Remove the metal bottom plate.
- Now slide the top cover backwards about 1 cm and remove it in an upward and backward direction.

Removing lift cover

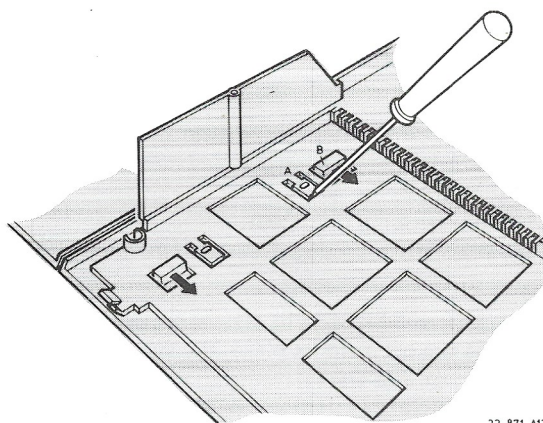
The lift cover can be demounted together with the top cover only (see 2.2.1).

2.2.2. Demounting the top plate

- Lift tag A to the top cover with a screwdriver so far, that the hole in the tag releases the pin to the top plate (see Fig. 2.3).
- Now slide the top plate in the direction of the arrow so far, that the eye 3 of the top plate releases the cover.
- Remove the top plate.

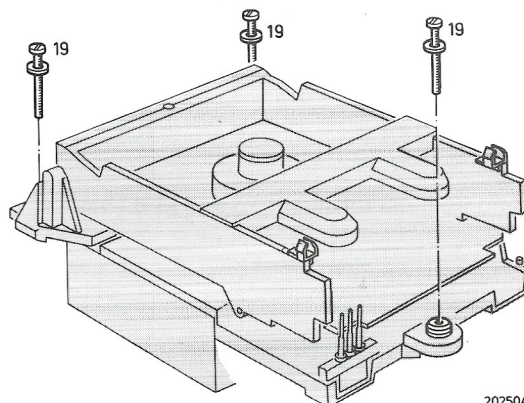
2.2.3. Demounting tape deck

- Disconnect the VCR from the mains.
- Completely remove screws 19 (3x) (Fig. 2.4).
- Lift the deck out of the cabinet with the front side first.
- Place the deck in the "Service" position (see Fig. 2.5). In this position the deck can perform all its functions, though without tape and not for a prolonged time. If the deck is used in the service position for a prolonged time, this may impair the lubrication of the motors.
- For bigger repairs the wiring should be disconnected from the tape deck and the deck should be placed on the service supports (see Fig. 2.6).



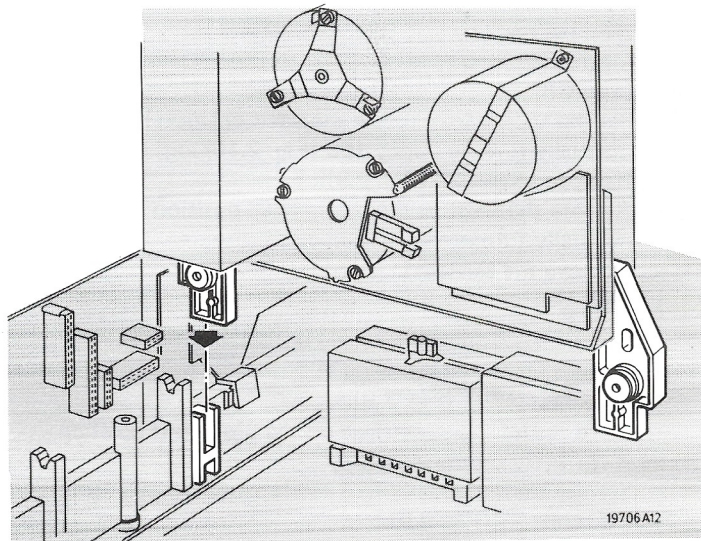
22 871 A12

Fig. 2.3



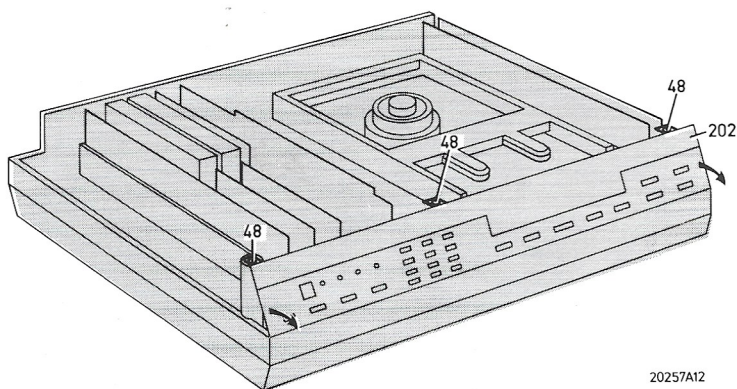
20250A12

Fig. 2.4



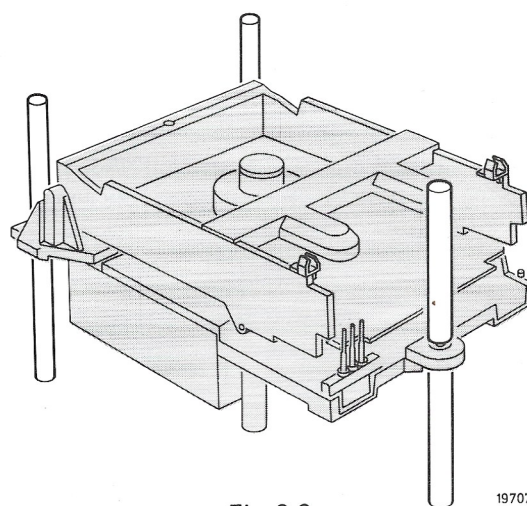
19706A12

Fig. 2.5



20257A12

Fig. 2.2



19707A12

Fig. 2.6

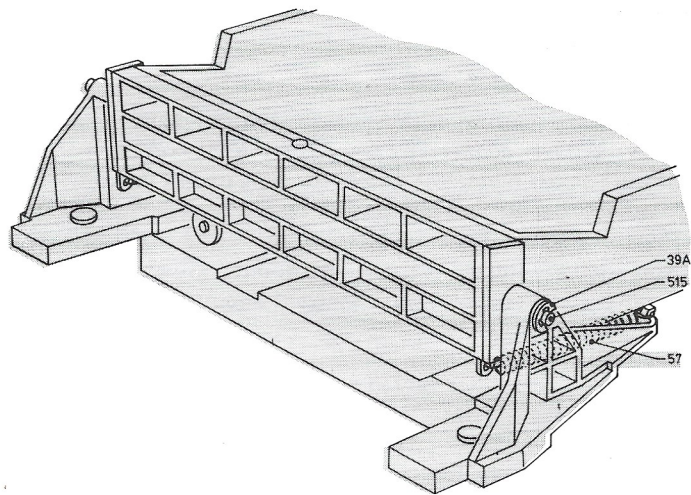
2.2.4. The cassette lift

Removal

- Open the cassette lift by pushing onto the armature of the electromagnet 78 by hand.
- Loosen the springs 57, 83.
- Remove the clamping rings 39A.
- Push the pins 515 inwards and remove the cassette lift.

Mounting

- Mounting the lift will be done in reverse order. Before putting the lift onto its place, the springs 57, 83 have to be hooked into the relevant holes of the lift. Before mounting the pins 515, the springs have to be laid into the correct direction.



20251A12

Fig. 2.7

2.2.5. Solenoid of pressure-roller pressure mechanism

Removal

- Tension the pressure spring 115 with one hand.
- Remove spindle 116 with the aid of tweezers (Fig. 2.8)
- Remove screw 23 and remove the solenoid.

Mounting

- For mounting the solenoid, proceed in the reverse order.
- Adjust the switching point of SK5. For this, refer to Chapter 2.3.2.

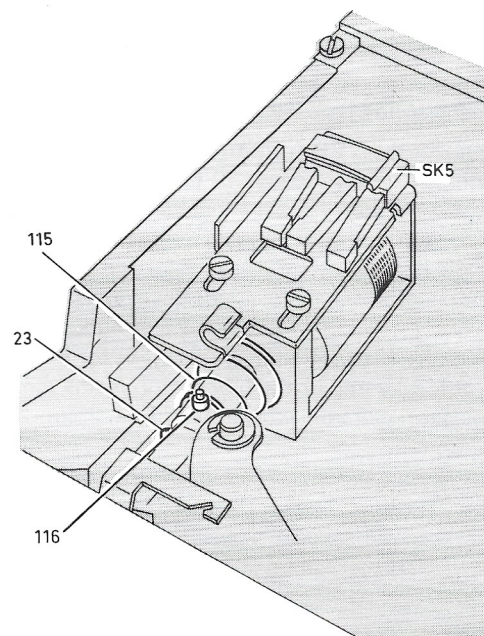
2.2.6. Carriages 81 and 106

Removal

- Remove a cassette, if present, from the VCR and close the lift.
- Disconnect the VCR from the mains.
- Remove the 3 screws 19 (Fig. 2.4) and put the mechanism onto the service studs above the fixing points (Fig. 2.6).
- Set the VCR partly to the threaded position by manually turning pulley 108 (Fig. 2.10) anti-clockwise.
- Remove screws 28 (Fig. 2.9).
- Restore the VCR to the unthreaded position by manually turning pulley 108 clockwise.
- Remove the carriages.

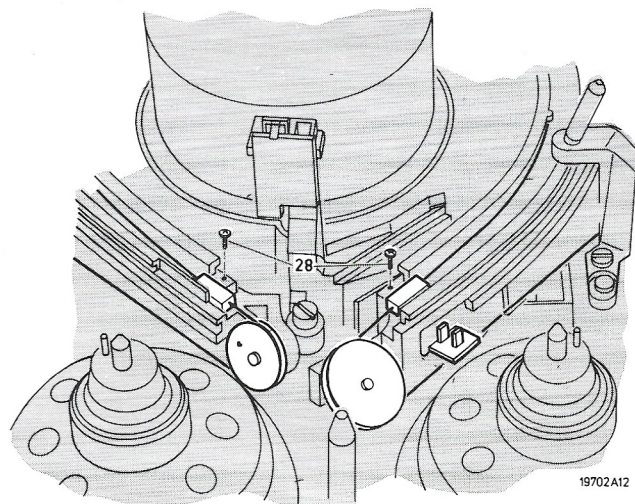
Mounting

- Set the VCR manually to the unthreaded position (blocks on threading string opposite the holes of the locking screws). (Fig. 2.9).
- Place the left-hand carriage on the block and position it correctly on the guideway.
- Set the VCR manually to a partly threaded position.
- Fit screw 28 (Fig. 2.9).
- Unthread the VCR completely, so that the centre of the right-hand block of the threading string is opposite the hole of screw 28.
- Place the right-hand carriage on the block of the string and in the guideway.
- Set the VCR manually to a threaded position.
- Refit locking screw 28.
- Restore the VCR manually to the unthreaded position, checking that both carriages run smoothly and correctly in the guideways.



19710A12

Fig. 2.8



19702A12

Fig. 2.9

2.2.8. Scanning unit 103

Removal

- Put the mechanism into the service position (Fig. 2.5).
- Loosen the plug connections to the scanning unit from the cable trees.
- Remove the screws pos. 1 (Fig. 2.13).
- Remove the scanning unit at the lower side of the mechanism.

Mounting

- Take care that the threading string does not stick behind the stop plates of the carriages.

2.2.9. Drum unit

Important:

The head drum and the lower drum should not be touched with bare hands. In the case of service activities during which the head drum or the lower drum have to be touched, nylon gloves should be worn.

Removal

- Before the plugged connections to the lower drum are detached, their positions on the lower drum housing should be marked. In this way it is avoided that wrong connections are made during mounting.
- Unplug the connections to the lower drum.
- Loosen screw 23 (Fig. 2.14) and remove position detector 100.
- Remove screws 6.
- The drum unit can now be removed in an upward direction.

Mounting

- Check that the locating rim on the drum unit M3 and the seat in the scanning unit 103 are clean and not damaged.
- Put the drum unit in place in the scanning unit. The drum unit is provided with a pin which should engage with a groove of the scanning unit (mounting is possible in one position only).
- Fit the fixing screws 6 and the position detector 100.
- Restore the plugged connections. Check that no wrong connections are made.
- Adjust the tape path (see 2.3.6).

2.2.10. Head drum

Important:

The surfaces of the head disc and the lower drum should not be touched with bare hands. Therefore, nylon gloves should be worn during the following operations.

Removal

- a. Loosen screw 23 and remove position detector item 100 (Fig. 2.14).
- Loosen the screw, which is visible through the square hole in the top plate of the headdrum, by turning it two complete revolutions clockwise.
 - Remove the head disc from the shaft.

Mounting

- Check the clamping screw which is visible through the hole in the top plate of the head drum is not tightened. The screw is untightened by turning it clockwise.
- Check that the shaft of the lower drum is clean and not damaged.
- Press the drum vertically and without forcing onto the shaft until its butts.

- Tighten the clamping screw by turning it as far as possible anti-clockwise. Subsequently, turn it 30° to 60° back. The tightening torque of this screw should not exceed 1 N.cm.
- When the clamping screw is tightened, no external forces should be exerted on the head drum.
- Check the electrical adjustments (see 2.1.9 and Fig. 2.1).

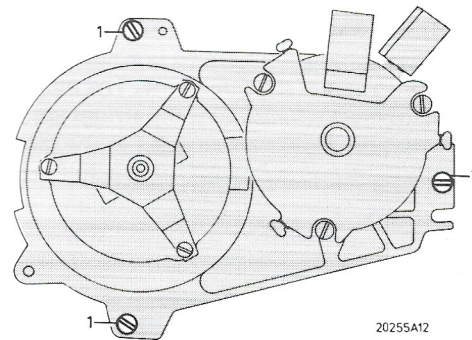


Fig. 2.13

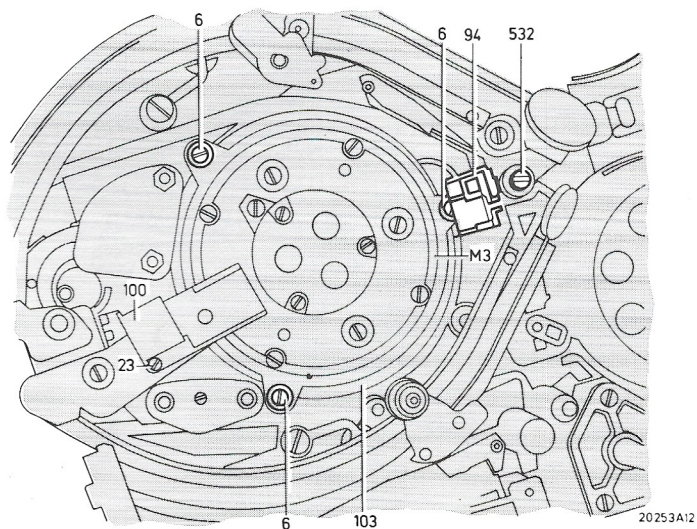


Fig. 2.14

2.1.7. P52 (HPS)

- *Frequency response (3028)*
- *Balance (3029)*
- Make a recording.
- Play back this recording.
- Connect oscilloscope to 23U162 (time base 5 ms/div.)
- Adjust 3028 for equal amplitude of both video head signals.
- Subsequently, connect oscilloscope between 2R4 and 1R4 (1R4 is ground). Connector R4 is mounted on U102; refer also to Fig. 2.1.
- Adjust 3029 for equal amplitude of both video head signals.

Note:

The trimming potentiometers become accessible after removal of the VCR's bottom cover.

2.1.8. P66 (WLP)**Beginning or end of tape detection (3011)**

- Check if P62 (item 94 on page 3-20) is moved well to and from the head disc upon threading-in and threading-out. It might happen that good functioning is obstructed by the wire tree to P62 or that a spring to P62 is broken or loose.
 - When adjusting 3011 the cassette lid should be kept closed and no strong light is allowed to fall on the recorder.
- In this way one prevents that false light on the photo-transistors of P62 will influence the adjustment.

- Connect DC-voltmeter between points A and B of P66 (refer to Fig. 2.1.).
 - Insert cassette in the recorder.
 - Select PLAY mode.
- Now adjust the difference voltage between the points A and B (V_{AB}) with 3011 so that it is 0 ± 10 mV.
- Select "Wind" or "Rewind" mode in threaded-out situation. Check if in this position the absolute value of V_{AB} is smaller than 20 mV. Check if the absolute value of V_{AB} is greater than 150 mV when reaching the end of tape and when reaching the beginning of tape.
 - Select "Wind" or "Rewind" mode in threaded-in situation. Check if the absolute value of V_{AB} is greater than 160 mV when reaching the end of tape and when reaching the beginning of tape. If the absolute value of V_{AB} is lower than 160 mV, P62 can be too insensitive or the reflection foil of the cassette reflects insufficiently.

2.1.9. Video head disc

- After having replaced the video head disc 5 electrical adjustments have to be carried out, as indicated in Fig. 2.1. The red connecting lines indicate the sequence of adjustments.

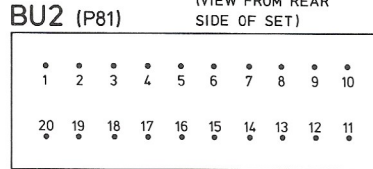
The adjustments are:

1. Frequency response (item 3028 on P52)
2. Balance (item 3029 on P52)
3. Automatic tracking (item 3006 on U222)
4. Gap position (item 3033 on U202).
5. 3 MHz-definition (item 3035 on U102).

ADJUSTING DIAGRAM
(SET ADJUSTMENTS ONLY)

SURVEY OF SIGNALS ON 20 POLE SOCKET

20 POLE SOCKET
(VIEW FROM REAR
SIDE OF SET)



PIN NR.	SIGNAL	DESCRIPTION
1	SEX	SOUND EXTERN IN
2	SMO	SOUND TO UHF-MODULATOR (SOUND EXTERN OUT)
3	+12b	
4	TP1	TESTPOINT FOR BIAS ADJ.
5	CRO	CAMERA REMOTE OUT
6	EXO	EXTERNAL ON
7	RI	REMOTE IN (VIA CAMERA)
8		
9	HFA	HEAD TO FRAME ADDED PULSE
10	⊥	MASS FOR HFA

PIN NR.	SIGNAL	DESC
11	MUT	MUTE
12	REC	VOLT. POSI
13	MUA	MUTE (MUT)
14	MUS	MUTE (MUT)
15	PCT	PLAY (ENV)
16	⊥	MASS
17	CVBS (1)	CVBS
18	CVBS (2)	CVBS
19	PB	VOLT. POSI
20	⊥	MASS

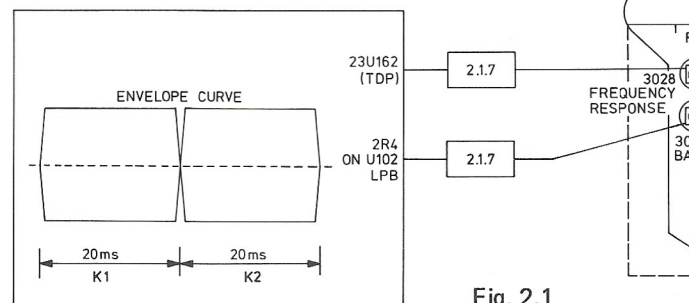
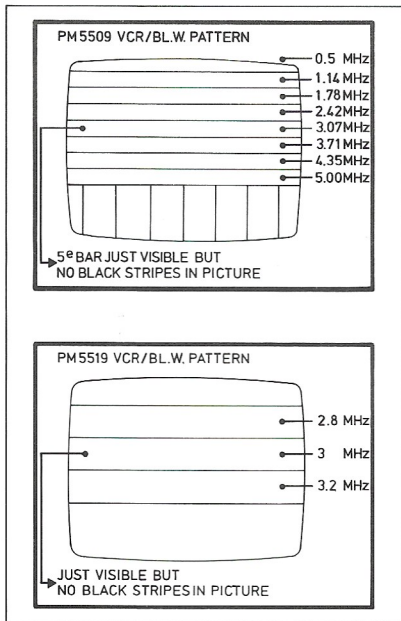
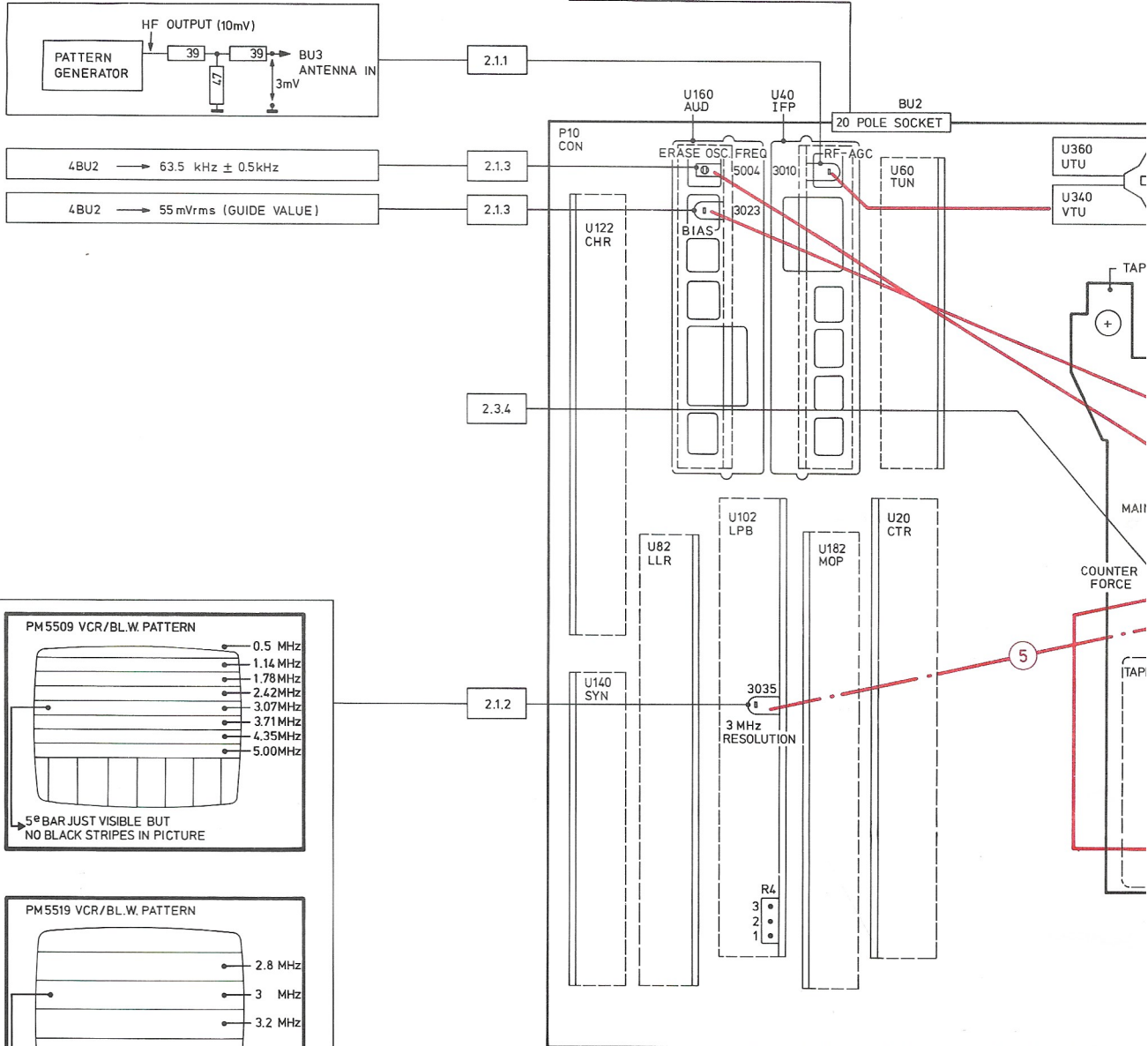
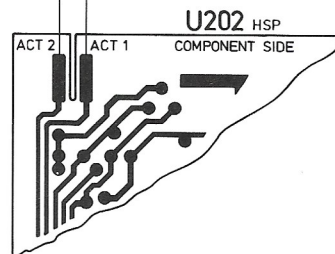
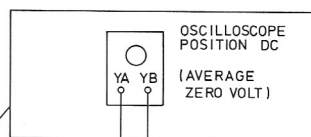
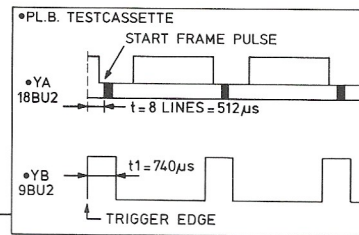
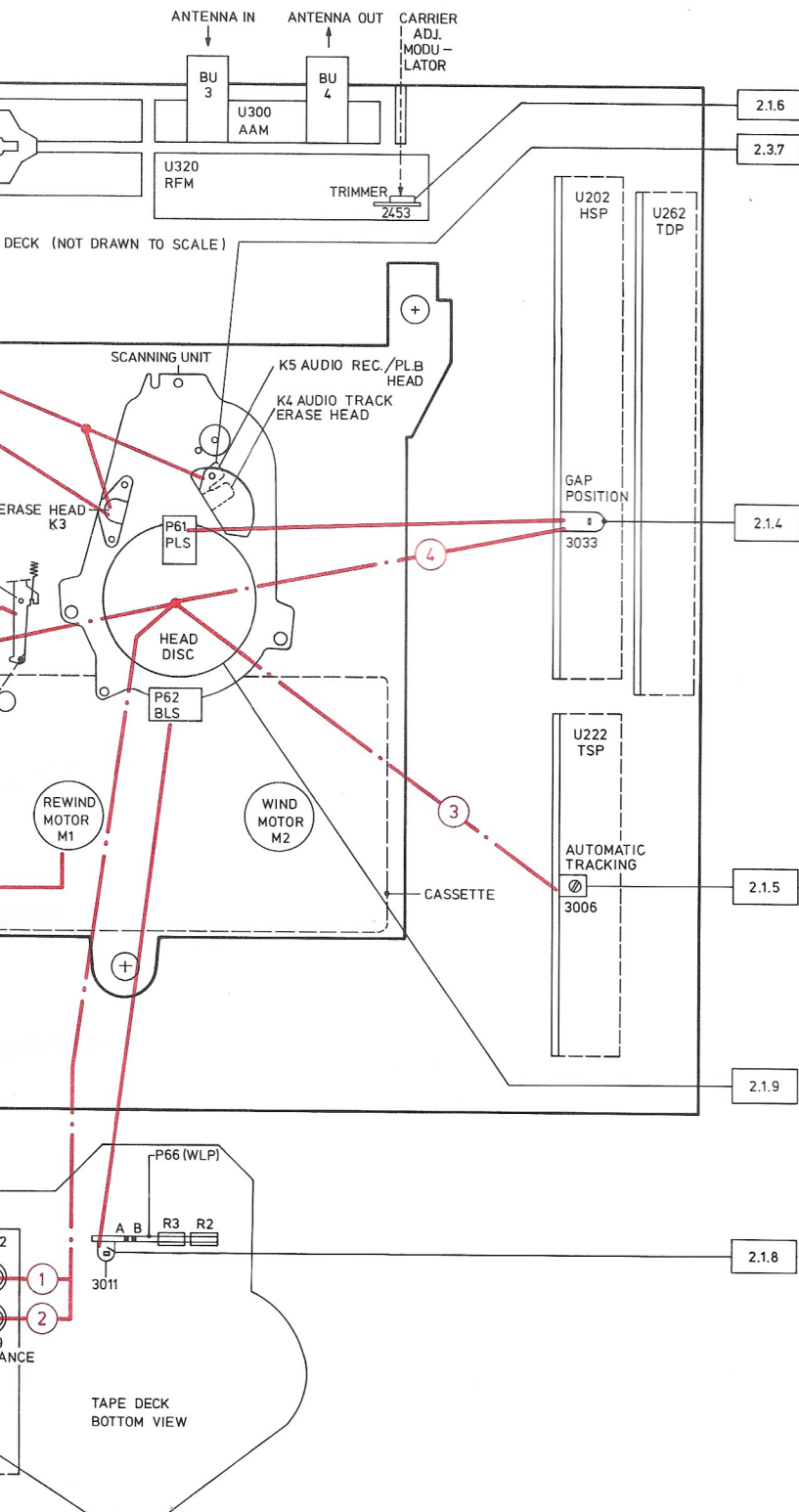


Fig. 2.1

DESCRIPTION
VIDEO SIGNAL
USE LOW ONLY IN RECORDING
ALL (CVBS+AUDIO) EXTERN
SOUND ONLY SOUND EXTERN
BACK CHROMA TRACKSENSING (LOPE CURVE)
FOR PCT
EXTERN IN
EXTERN OUT
USE LOW ONLY IN PLAY-BACK
FOR SEX (SEE PIN 1)



- 2.1.6
- 2.3.7
- 2.1.4
- 2.1.5
- 2.1.9
- 2.1.8