MAGNETBAND-CASSETTE

AUFBAU-
CASSETTE

BELT GUIDE ROLLERS (2)

FLAT DRIVE BELT

SUPPLY HUB

TAPE SHOWN IN
B.O.T. POSITION

TAKE-UP HUB

READ/WRITE
HEAD

BELT CAPSTAN

RUBBER COVERED
DRIVE ROLLER

DRIVE MOTOR

FILE
PROTECT

TAPE PATH
(OXIDE OUT)

FIXED TAPE
GUIDES (2)

LIGHT SENSI...

DIRECTION OF FORWARD
TAPE MOTION

AUFBAU-BAND

| END OF TAPE EOT | FRÜHWARNUNG EARLY WARNING | LOADPOINT | BEGINING OF TAPE BOT |
|---|---|---|---|

TRACK 3

2

1

4
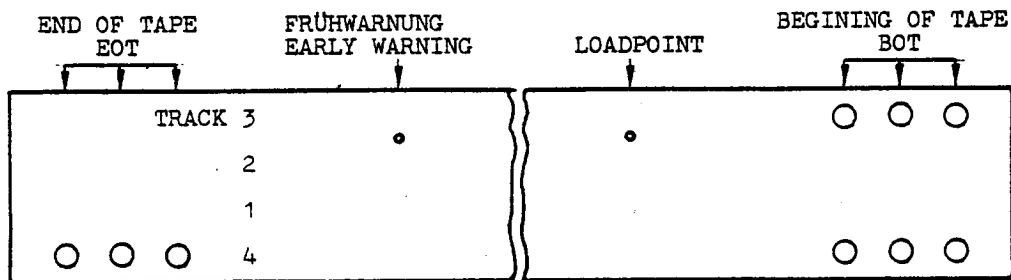
VORWÄRTS-RICHTUNG

BAND-FORMAT

VORWÄRTS-RICHTUNG

LOAD POINT

SPUR 2

SPUR 1

SPUR 0

SPUR 3  |  DATA  | IBG |  DATA  |          |  IBG  |      |  IBG  | DATA

DATA

INITIAL GAP

INTER BLOCK GAP

152 mm/6 inch

DATA BLOCK

min. 30,5 mm/1,2 inch
max. 122 mm/4,3 inch

TAPE MARK

Abschnitts-Marke

| PRE-AMBLE | DATA min.32-max.2048B. | C R C | POST-AMBLE |
|-----------|------------------------|-------|------------|

15×0-Bit          1×1-Bit
1×1-Bit           15×0-Bit

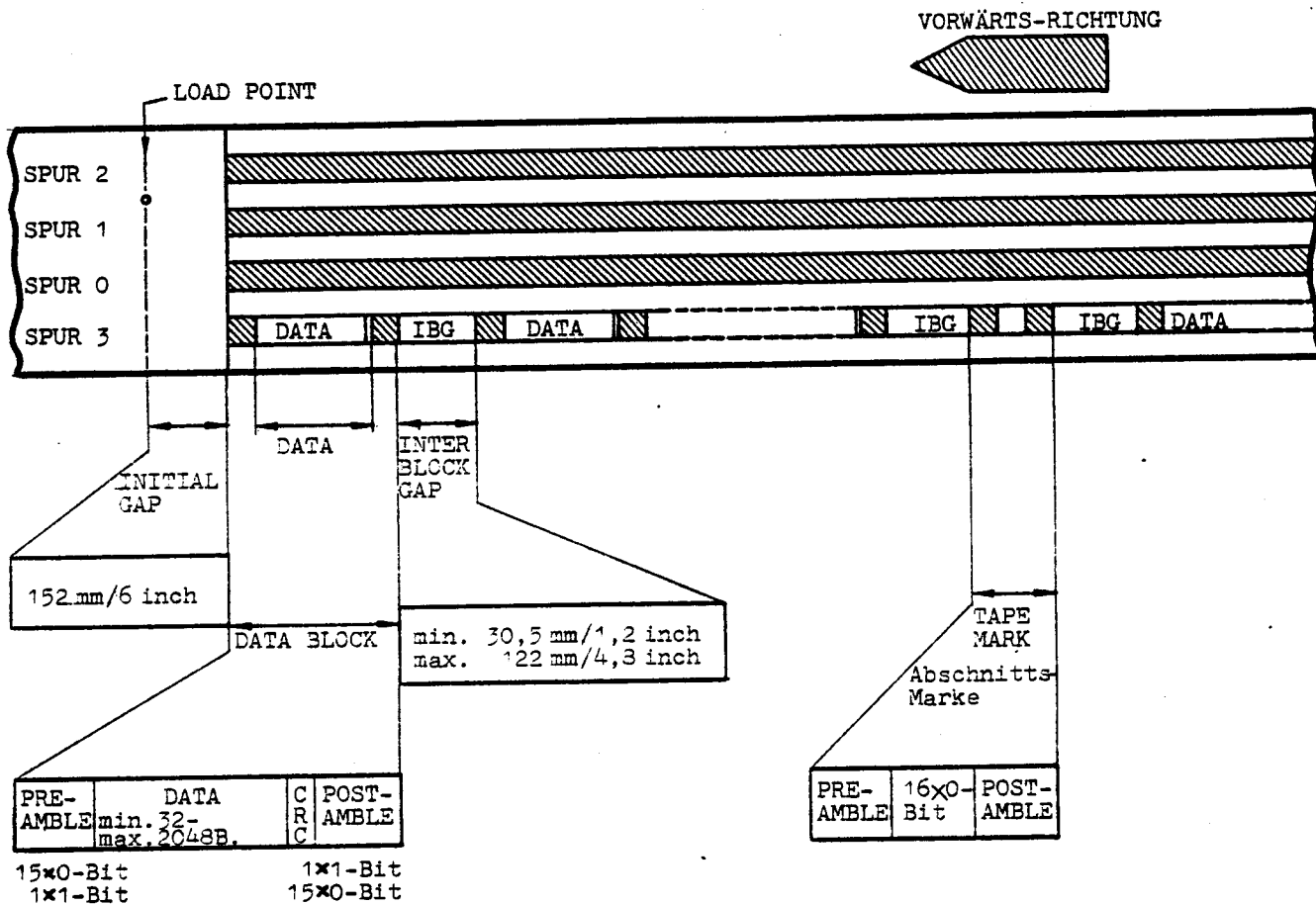| PRE-AMBLE | 16×0-Bit | POST-AMBLE |
|-----------|----------|------------|

Die Spuren haben die Nummern 0-3.
Spur 0 wird als Inhaltsverzeichnis benutzt, die
Spuren 1-3 für DATEN. Bei einer Blocklänge von
128 Bytes ergibt sich pro Cassette eine Daten-
kapazität von 750KBytes.

Spur 0 enthält:

- einen Datenträger-Kennsatz (1Block)
- einen Inhaltsverzeichnisblock für jede auf
  der Cassette vorhandene Datei.
- einen Cassetten-Belegungsblock
- eine Abschnittsmarke

Jede der Spuren 1-3 enthält eine Folge von
Dateisegmenten:

- einen Dateikennsatz (1Block)
- Datenblöcke
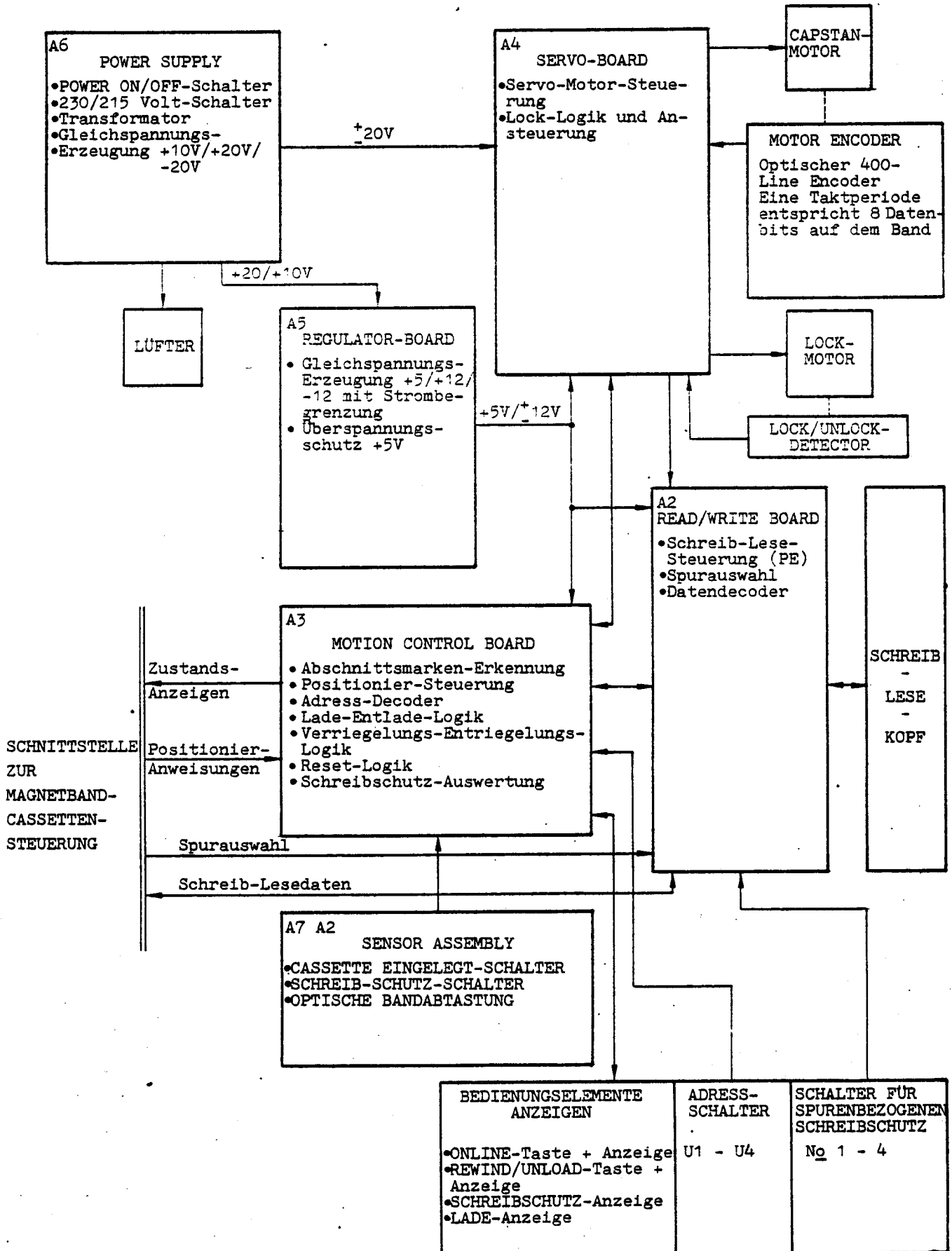- Abschnittsmarke
- Dateiende-Block
- Abschnittsmarke

Nach dem letzten Dateisegment einer Spur
folgt:

- ein Spurende-Block
- eine Abschnittsmarke

Siehe auch AMBOSS 6.610
Anwenderhandbuch S.108

FORMATE der einzelnen Blöcke: siehe Anwenderhandbuch (Anhang)

CASSETTEN-LAUFWERK

BLOCKSCHALTBILD

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┌─────────────────────────┐              ┌─────────────────────────┐        ┌──────────────┐
│ A6                      │              │ A4                      │        │ CAPSTAN-     │
│   POWER SUPPLY          │              │   SERVO-BOARD           │───────▶│ MOTOR        │
│ •POWER ON/OFF-Schalter  │              │ •Servo-Motor-Steue-     │        └──────────────┘
│ •230/215 Volt-Schalter  │              │   rung                  │
│ •Transformator          │    +20V      │ •Lock-Logik und An-     │        ┌──────────────────────┐
│ •Gleichspannungs-       │─────────────▶│   steuerung             │◀───────│ MOTOR ENCODER        │
│ •Erzeugung +10V/+20V/   │              │                         │        │ Optischer 400-       │
│        -20V             │              │                         │        │ Line Encoder         │
│                         │              │                         │        │ Eine Taktperiode     │
└─────────────────────────┘              │                         │        │ entspricht 8 Daten-  │
                                         │                         │        │ bits auf dem Band    │
         +20/+10V                        │                         │        └──────────────────────┘
┌────────┐  ┌─────────────────────────┐ │                         │        ┌──────────────┐
│        │  │ A5                      │ │                         │───────▶│ LOCK-        │
│ LÜFTER │  │   REGULATOR-BOARD       │ │                         │        │ MOTOR        │
│        │  │ • Gleichspannungs-      │ │                         │        └──────────────┘
└────────┘  │   Erzeugung +5/+12/     │ └─────────────────────────┘        ┌──────────────────────┐
            │   -12 mit Strombe-      │   +5V/+12V                          │ LOCK/UNLOCK-         │
            │   grenzung              │                                     │ DETECTOR             │
            │ • Überspannungs-        │                                     └──────────────────────┘
            │   schutz +5V            │
            │                         │       ┌─────────────────────────┐  ┌──────────┐
            └─────────────────────────┘       │ A2                      │  │          │
                                              │ READ/WRITE BOARD        │  │ SCHREIB  │
                                              │ •Schreib-Lese-          │  │ -        │
                                              │  Steuerung (PE)         │  │ LESE     │
                                              │ •Spurauswahl            │  │ -        │
                                              │ •Datendecoder           │  │ KOPF     │
                                              │                         │  │          │
┌─────────────────────────────────────┐      │                         │  └──────────┘
│ A3                                  │      └─────────────────────────┘
│   MOTION CONTROL BOARD              │
│ • Abschnittsmarken-Erkennung        │
│ • Positionier-Steuerung             │
│ • Adress-Decoder                    │
│ • Lade-Entlade-Logik                │
│ • Verriegelungs-Entriegelungs-      │
│   Logik                             │
│ • Reset-Logik                       │
│ • Schreibschutz-Auswertung          │
└─────────────────────────────────────┘
```

Zustands-
Anzeigen

Positionier-
Anweisungen

SCHNITTSTELLE
ZUR
MAGNETBAND-
CASSETTEN-
STEUERUNG

Spurauswahl

Schreib-Lesedaten

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┌─────────────────────────────────────┐
│ A7 A2                               │
│       SENSOR ASSEMBLY               │
│ •CASSETTE EINGELEGT-SCHALTER        │
│ •SCHREIB-SCHUTZ-SCHALTER            │
│ •OPTISCHE BANDABTASTUNG             │
└─────────────────────────────────────┘
```

| BEDIENUNGSELEMENTE ANZEIGEN | ADRESS-SCHALTER | SCHALTER FÜR SPURENBEZOGENEN SCHREIBSCHUTZ |
|---|---|---|
| •ONLINE-Taste + Anzeige<br>•REWIND/UNLOAD-Taste +<br> Anzeige<br>•SCHREIBSCHUTZ-Anzeige<br>•LADE-Anzeige | U1 - U4 | No 1 - 4 |

# TANDBERG

# TDC 3000
# DIGITAL CARTRIDGE RECORDER
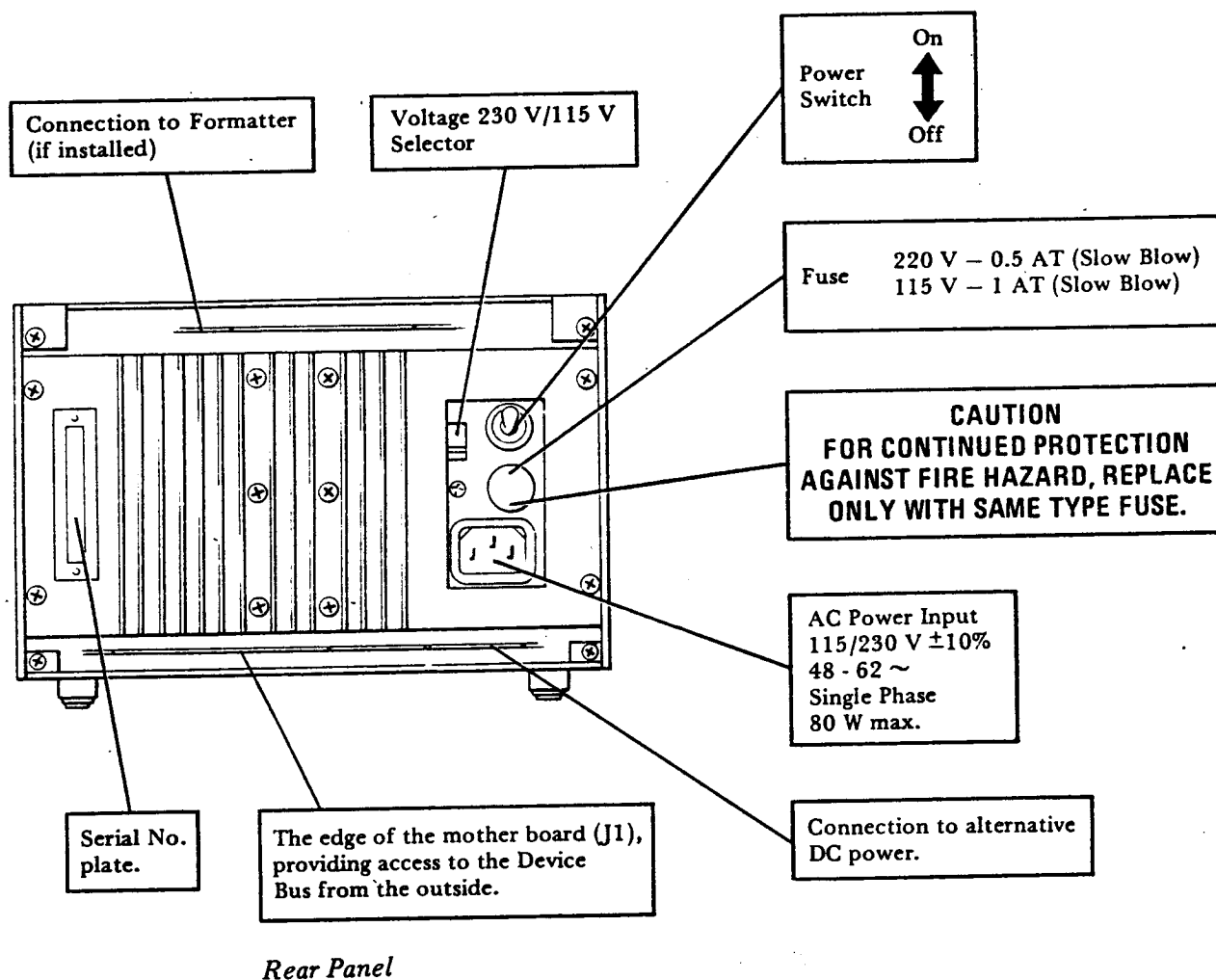
## Operating Instructions

6530

**TANDBERG** TDC 3000
DIGITAL CARTRIDGE RECORDER
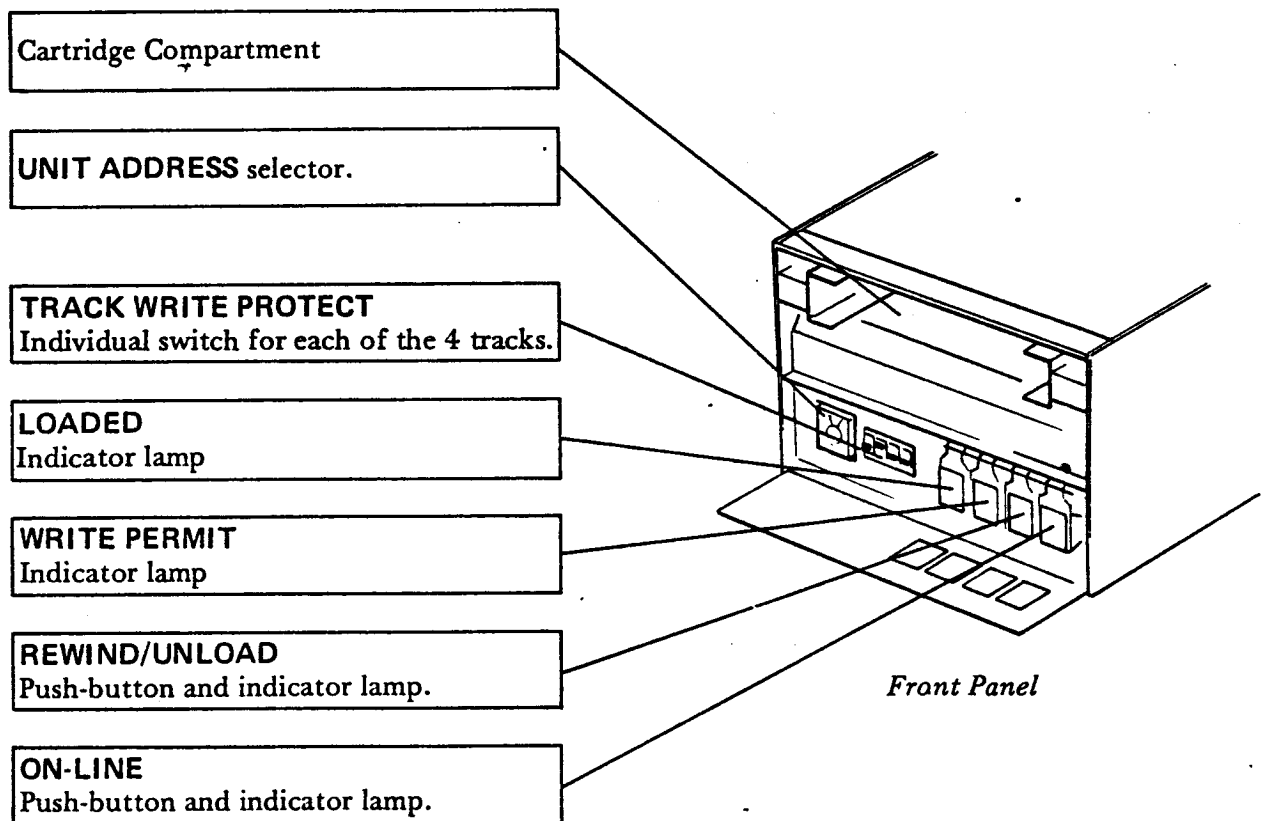
LOADED   WRITE PERMIT   REWIND UNLOAD   ON-LINE

# OPERATING INSTRUCTIONS

NOTE! Before connecting the recorder to the
power supply, check that the voltage selector and
the fuse at the rear are set correctly.

| | |
|---|---|
| Connection to Formatter (if installed) | |
| Voltage 230 V/115 V Selector | |

Power Switch — On / Off

Fuse    220 V — 0.5 AT (Slow Blow)
        115 V — 1 AT (Slow Blow)

**CAUTION
FOR CONTINUED PROTECTION
AGAINST FIRE HAZARD, REPLACE
ONLY WITH SAME TYPE FUSE.**

AC Power Input
115/230 V ±10%
48 - 62 ~
Single Phase
80 W max.

Serial No. plate.

The edge of the mother board (J1),
providing access to the Device
Bus from the outside.

Connection to alternative
DC power.

*Rear Panel*

**Power ON indicator**

The tape marker lamp serves as the power-on indicator
and is visible in the opening for the cartridge.
The power ON/OFF switch is located on the power
supply unit (if installed) and is shown above.

Cartridge Compartment

UNIT ADDRESS selector.

**TRACK WRITE PROTECT**
Individual switch for each of the 4 tracks.

**LOADED**
Indicator lamp

**WRITE PERMIT**
Indicator lamp

**REWIND/UNLOAD**
Push-button and indicator lamp.

**ON-LINE**
Push-button and indicator lamp.

*Front Panel*

**CAUTION**
**Do not touch the Belt Capstan in the Cartridge.**

Write Protection

Before a cartridge is inserted you can protect it from writing by rotating the WRITE PROTECT plug on the cartridge to the SAFE position. If writing is desired on one or all tracks, the WRITE PROTECT plug must be in the unsafe position.
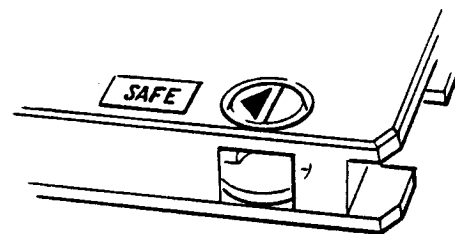
*Rotatable Write Protect Plug on the Cartridge*

### Track Write Protection

If the TRACK WRITE PROTECT switches are not fitted, the unit may be permanently track write protected by jumpers on the Read/Write Board.

If the switches are fitted and you want to protect a single track from writing, slide the TRACK WRITE PROTECT switch on the sub-panel to the PROTECTED down position. All 4 tracks can be individually protected.

These switches will protect a written track even if the cartridge WRITE PROTECT plug is in the unsafe position (which is required if writing on another track is desired).

When a protected track is addressed, the WRITE/PERMIT indicator will go off and alert the operator.

It will also go off if all tracks are protected.
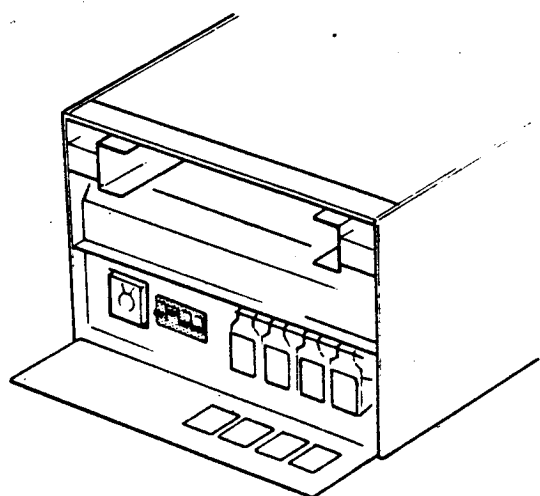
*Track Write Protect Switches (shown in grey tone)*

### Unit Address Selector

If the UNIT ADDRESS selector is not fitted, the unit may be permanently assigned an address by jumpers on the Motion Control Board. The UNIT ADDRESS selector on the sub-panel permits the operator to assign the unit as number 1, 2, 3, 4, or none (disconnected).
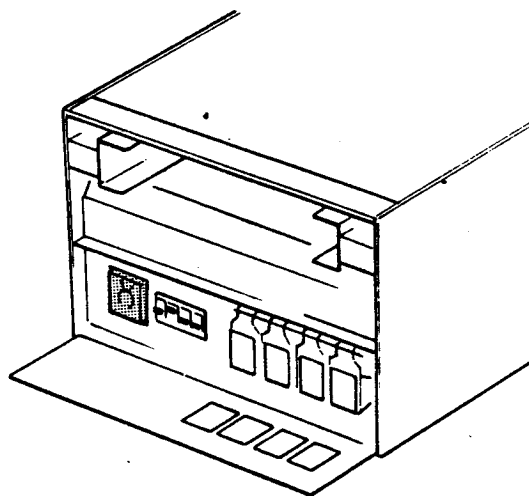
*Unit Address Selector (shown in grey tone)*

## Loading

Load the cartridge into the machine by placing the front edge on the guides and pushing it in until it is flush with the front outline of the cartridge compartment.

When the drive mechanism senses the cartridge, the lock-mechanism will be activated and a slight click heard. The LOADED indicator will also come on.

If the WRITE PROTECT plug on the cartridge was set in the unsafe position, the WRITE PERMIT indicator will come on. The servo will then start and automatically move the tape to the Load Point (LP) mark. This is performed in less than 1 second, when the tape is at the Beginning of Tape (BOT) mark.

Cartridge shown in position for loading.

LOADED indicator

WRITE PERMIT indicator
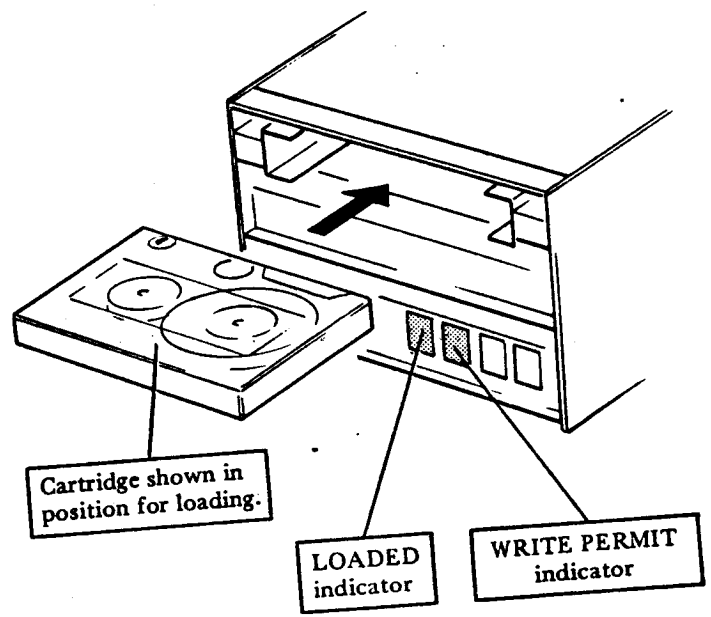
*Loading the Recorder*

## On-line

After the cartridge has been loaded into the machine, the recorder may be placed On-line by a single push on the ON-LINE button.

The corresponding indicator lamp will come on. The unit will now only respond to remote commands (the REWIND/UNLOAD button will be inhibited).

## Off-line

If the ON-LINE button is pressed a second time, the drive will go off-line and the ON-LINE indicator will go off.
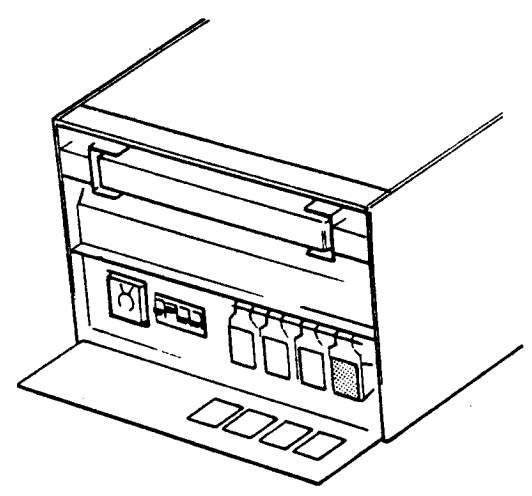
*ON-LINE push button and indicator lamp (shown in grey tone)*

## Alternative operation of the On-Line/Off-Line modes

Normally the drive is reset to the Off-Line mode when the power is switched on, and can only be placed On-line when the front panel ON-LINE push-button is pressed.

By inserting jumpers on the Motion Control Board, the following operations may be performed:

a)  The recorder is forced On-Line whenever a cartridge is loaded into the machine and Off-Line whenever it is unloaded. The front panel push-button is now in-operative.

b)  The recorder may also be commanded off-line by a signal on the Device Bus (OFLC, if strapped on the Mother Board).

c)  The recorder is forced On-Line when the power is switched on if the cartridge is in place.

d)  The ON-LINE push-button is inhibited as long as the drive is selected.

operation — 5

## Rewind

The Rewind command may be initiated anywhere on the tape.

If rewind to the Load Point (LP) is desired, the drive must first be placed Off-Line (see Off-Line description). Then a single short push on the REWIND/UNLOAD button will initiate a Rewind sequence. The REWIND/UNLOAD indicator will not come on. At any time after rewind is initiated, the ON-LINE button may be pressed, and the drive will again be On-Line. The rewind time is about 40 seconds for the whole tape length. [Rewind may also (independently) be commanded by the Device Bus.]

| REWIND/UNLOAD push button and indicator | ON-LINE push button and indicator |
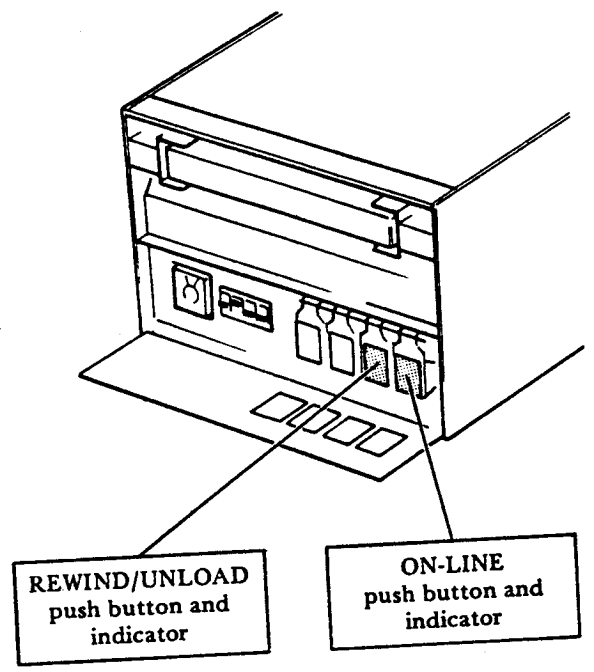
## Unloading

The Unload command may be initiated anywhere along the tape. To unload the cartridge, the drive must first be Off-Line (a single push on the ON-LINE button).

Then the REWIND/UNLOAD button must be pressed for approximately 0.5 second until the corresponding indicator comes on. The Unload sequence is now initiated. The tape will then rewind past the Load Point (LP) to the Beginning of Tape (BOT) point, and the cartridge will be ejected 1 to 2 cm by the locking mechanism, and it will be visible outside the front edge of the recorder. The LOADED indicator will go off.

If the Unload was unintentionally commanded, a new short push on the REWIND/UNLOAD button will cancel the Unload command and the drive will remain in the Rewind mode.
[Unload may also (independently) be commanded by the Device Bus.]

| REWIND/UNLOAD button and indicator | ON-LINE button and indicator |
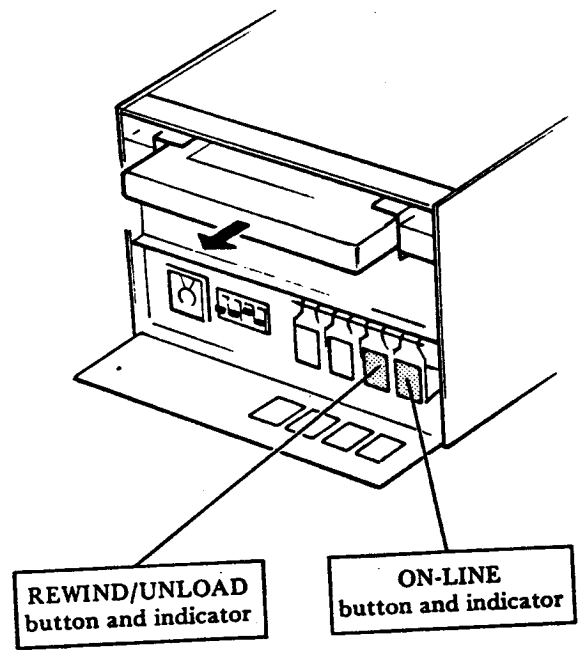
## MALFUNCTION

### Primary Power Failure

If the primary power fails, the cartridge will be retained in the mechanism. When power returns, the logic will preset to the ON TAPE status. If the primary power does nòt return and the operator wants to retrieve the cartridge, it can be done by firmly grasping the label side of the cartridge and withdrawing it from the spring loaded retention mechanism.

The cartridge cannot be re-inserted until the primary power returns and the locking mechanism automatically resets itself to the unlocked position.

### rive

If the drive fails in such a way that it is potentially damaging to the information written on the tape, all tape motion will be halted. The cartridge can only be retrieved by overcomming the spring retention forces.

There is one exception: If the drive failure is caused by lack of Write Voltage after the Write Enable command is issued, the drive may be placed Off-Line, and the cartridge ejected in the normal way.

## MAINTENANCE

It is of the utmost importance that the head is kept clean, otherwise the machine needs very little maintenance.

CAUTION: Do not use any hard or sharp object that might scratch the surface of the head.

### Head cleaning

Particles of oxide from the magnetic tape form a deposit on the head and must be removed to avoid drop-outs. A suitable cleaning fluid to dissolve the deposit is MS200 MAGNETIC TAPE HEAD CLEANER or equal, with MS226 EXTENTION NOZZLE for access to the head from the front without removing the top cover.

This is available as a Head Cleaning Kit with Tandberg ordering number 960373 and a Tape Head Cleaner Replacement with ordering number 960374.

## IF SOMETHING GOES WRONG

Before you phone for service, go through this check list to see if you can correct the fault yourself:

| Symptom | Suggestion |
|---|---|
| It is impossible to insert the cartridge. | Check if the light in the opening for the cartridge is on. |
| No light in the opening for the cartridge. | Power cable disconnected or power switched off. Check the fuse. If it is blown, tell the serviceman when you phone. |