

Film-Tech

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SONY.

SDDS Player System

DIGITAL FILM SOUND DECODER

DFP-D2000

DIGITAL FILM SOUND READER

DFP-R2000

SDDS

Sony Dynamic Digital Sound TM

OPERATION MANUAL Japanese/English

1st Edition (Revised 2)

Serial No. 10001 and Higher (DFP-D2000)

Serial No. 10001 and Higher (DFP-R2000)

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

For customers in the USA

WARNING

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For customers in Canada

This apparatus complies with the Class A limits for radio noise emissions set out in Radio Interference Regulations.

Pour les utilisateurs au Canada

Cet appareil est conforme aux normes Classe A pour bruits radioélectriques, spécifiées dans le Règlement sur le brouillage radioélectrique.

For customers in the United Kingdom

WARNING

THIS APPARATUS MUST BE EARTHED.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Green-and-yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol \perp or coloured green or green-and-yellow.

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

VORSICHT

Um Feuergefahr und die Gefahr eines elektrischen Schlages zu vermeiden, darf das Gerät weder Regen noch Feuchtigkeit ausgesetzt werden.

Um einen elektrischen Schlag zu vermeiden, darf das Gehäuse nicht geöffnet werden. Überlassen Sie Wartungsarbeiten stets nur einem Fachmann.

Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß der Digitalfilm-Sound-Decoder DFP-D2000 in Übereinstimmung mit den Bestimmungen der BMPT-Amtsblatt Vfg 243/1991 und Vfg 46/1992 funktentstört ist.

Der vorschriftsmäßige Betrieb mancher Geräte (z.B. Meßsender) kann allerdings gewissen Einschränkungen unterliegen. Beachten Sie deshalb die Hinweise in der Bedienungsanleitung. Dem Bundesamt für Zulassungen in der Telekommunikation wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Sony Deutschland GmbH
Hugo-Eckener-Str. 20
50829 Köln

Hinweis

Gemäß der Amtsblätter des BMPT Nrn. 61/1991 und 6/1992 wird der Betreiber darauf aufmerksam gemacht, daß die von ihm mit diesem Gerät zusammengestellte Anlage auch den technischen Bestimmungen dieser Amtsblätter genügen muß.

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The SDDS (Sony Dynamic Digital Sound)¹⁾ Player System is comprised of the DFP-R2000 Digital Film Sound Reader and the DFP-D2000 Digital Film Sound Decoder.

The system reads digital audio data recorded on 35 mm movie film in the SDDS format, and feeds high quality digital sound to a theater sound system.

The features of this system include the following.

Playback of 8 channels of SDDS-format digital audio

The system can read 8 channels of digital audio signals recorded in the SDDS format on the P (picture) and S (sound) sides of the film. It features digital processing, for little or no signal degradation during playback.

P side	C (center) L (left) LC (left center) SL (surround left)
S side	R (right) RC (right center) SR (surround right) SW (sub-woofer)

In addition, the following four channels of compensation signals are read from the opposite sides of the film.

P side	Rmix (mixed R, RC and SR) SW' (compressed SW)
S side	Lmix (mixed L, LC and SL) C' (compressed C)

1) SDDS is a registered trademark of Sony Corporation.

Bypass output of analog audio signals

If necessary, analog audio signals recorded on analog tracks can be output directly during SDDS operation (bypass output). There are two bypass modes—software bypass and hardware bypass. Normally the software bypass mode is selected.

- **Software bypass**

Analog audio signals are output automatically when there are no digital audio signals recorded on the film, or when digital audio signals cannot be read properly.

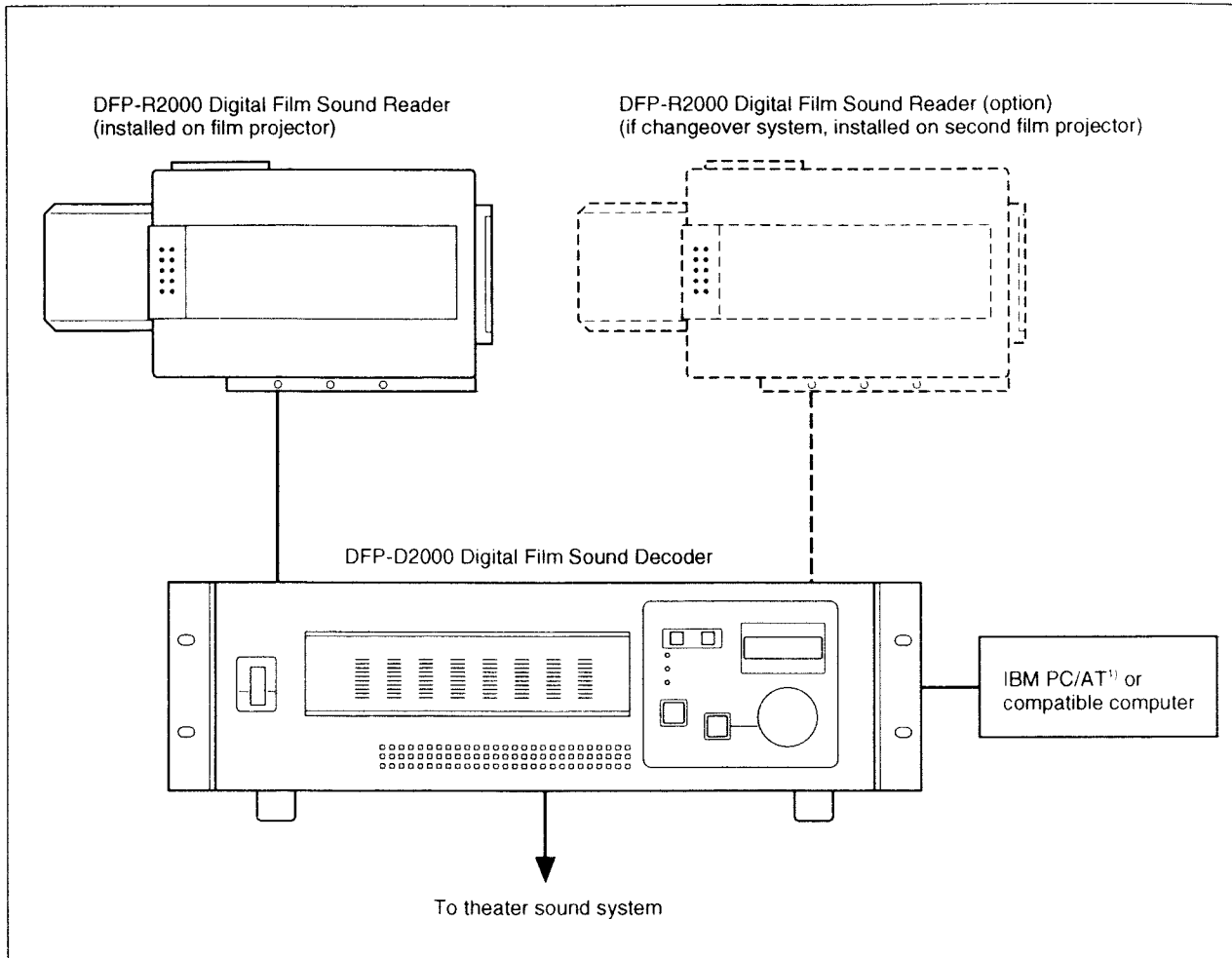
- **Hardware bypass**

Pressing the DFP-D2000 BYPASS button enables analog audio input signals to be always output directly.

No modifications to the projector needed

You can convert a conventional projector into an SDDS projector simply by installing the DFP-R2000. No modifications to the projector are required.

System Configuration



System configuration

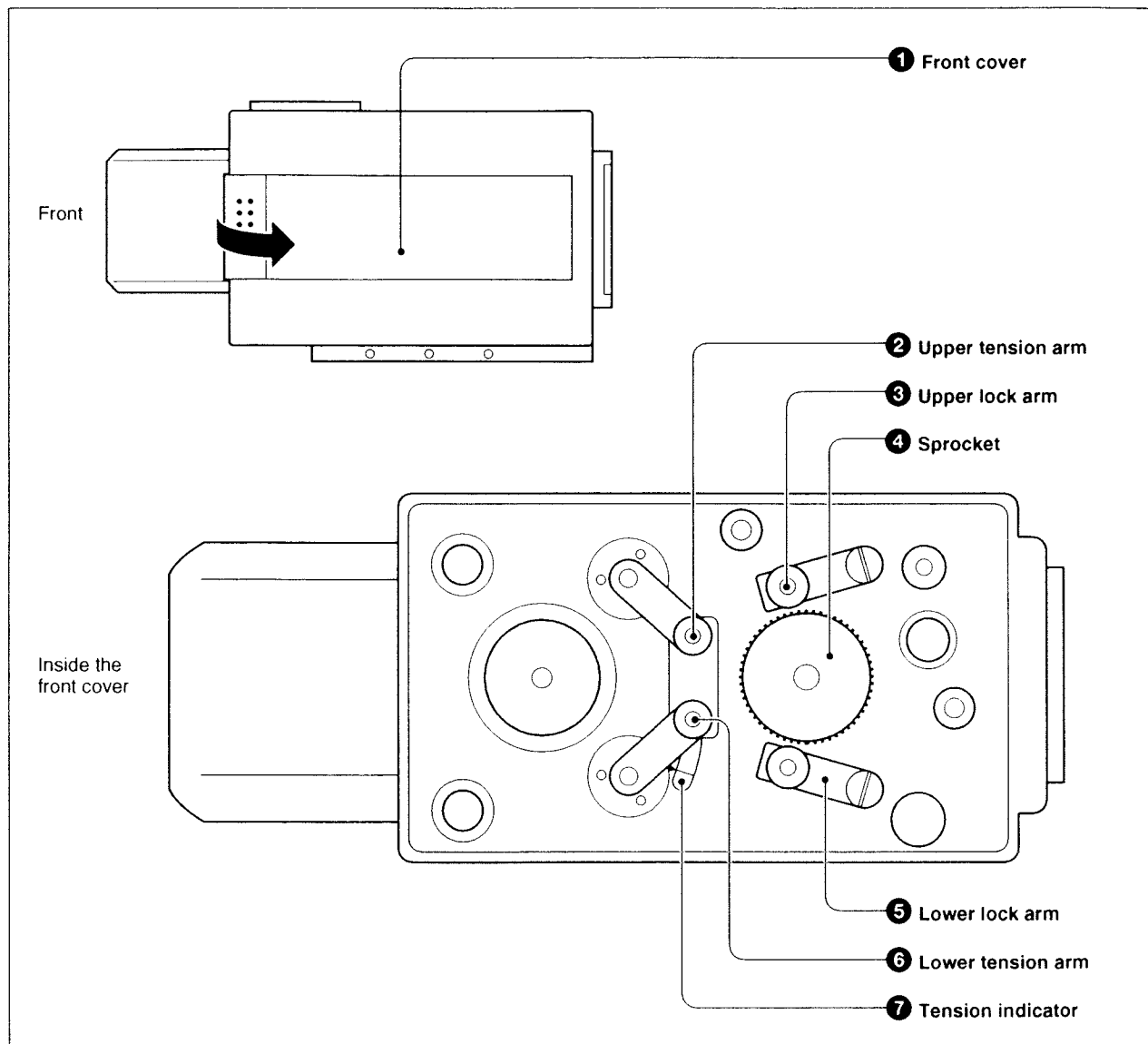
The DFP-R2000, installed on the film projector, reads the digital audio signals recorded on the film and sends them to the DFP-D2000. The DFP-D2000 converts digital audio signals received from the DFP-R2000 into analog audio signals and sends them to the theater sound system.

The IBM PC/AT¹⁾ or compatible computer is used to initialize DFP-D2000 when it is first installed and to make settings for the theater sound system.

1) IBM and PC/AT are registered trademarks of International Business Machines Corporation.

Location and Function of Parts

DFP-R2000



DFP-R2000

1 Front cover

To load film, open the unit by pulling the left edge of the front cover forward.

2 Upper tension arm

Adjusts film tension.

3 Upper lock arm

Locks and releases the upper tension arm 2.

4 Sprocket

5 Lower lock arm

6 Lower tension arm

Adjusts film tension.

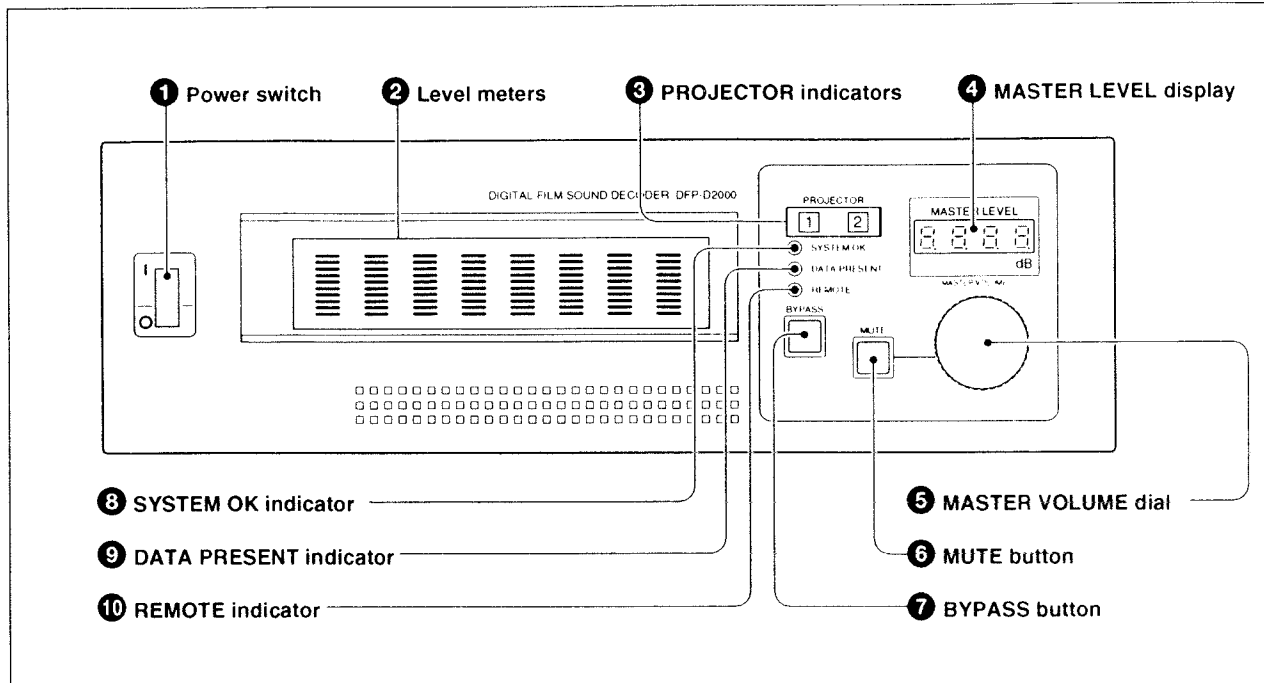
7 Tension indicator

Shows whether or not film tension is appropriate.

Location and Function of Parts

DFP-D2000

Front panel



DFP-D2000 front panel

1 Power switch

2 Level meters

Show the level of each channel.

3 PROJECTOR indicators

During playback with a changeover system, show which of the projectors is currently in use. If there is trouble with either of the DFP-R2000 units, the PROJECTOR indicator (1 or 2) corresponding to the projector connected to that DFP-R2000 unit flashes.

4 MASTER LEVEL display

Shows the master level in increments of 0.1 dB.

5 MASTER VOLUME dial

Adjusts the master volume.

6 MUTE button

Press this button, turning it on, to mute system output. The mute function suppresses output of analog signals converted from the digital signals read by the DFP-R2000.

7 BYPASS button

Press this button, turning it on, to suppress output of analog signals converted from digital signals, and enable direct output of analog audio signals input to the SYSTEM INPUTS or AUX IN connectors (hardware bypass function).

8 SYSTEM OK indicator

- Lights when the system is operating normally, and goes out when a system error occurs.
- Goes out to indicate a system warning, for example that the fan has stopped rotating or that there is no backup battery.

9 DATA PRESENT indicator

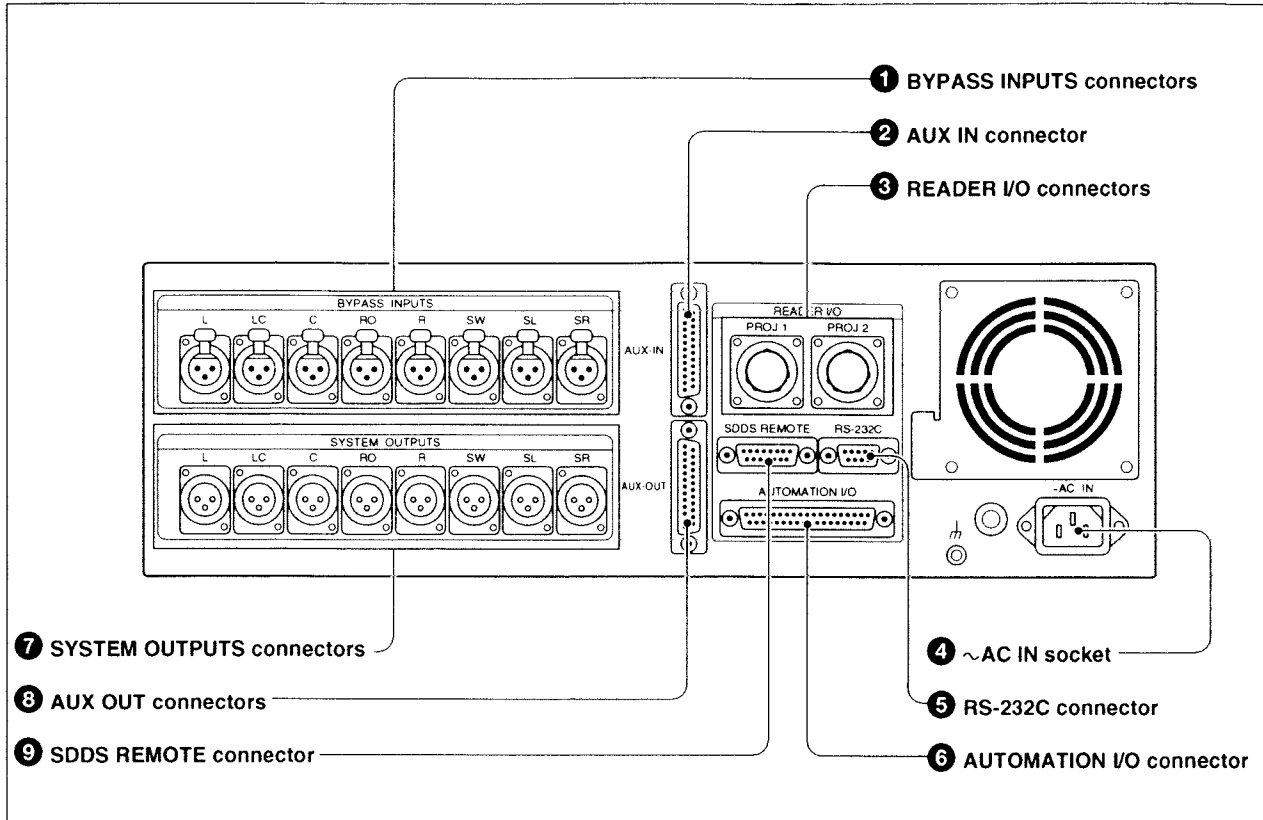
Lights when the unit is reading digital audio signals. Goes out during automatic output of analog audio signals input to the SYSTEM INPUTS or AUX IN connectors (software bypass function).

10 REMOTE indicator

Lights when the system is being controlled remotely.

For more information about remote control, contact your SDDS dealer.

Connector panel



DFP-D2000 connector panel

1 BYPASS INPUTS connectors

Input analog audio signals for each channel.

2 AUX-IN connector

Input THX®-standard analog audio signals for each channel. These connectors are connected in parallel with the BYPASS INPUTS connectors 1.

3 READER I/O connectors

Connect to the DFP-R2000 for input of digital audio signals read from the film. Use the PROJ 1 connector in a system with one projector, and use both the PROJ 1 and PROJ 2 connectors in a changeover playback system.

4 ~ AC IN socket

Connect the supplied power cord.

5 RS-232C connector

Connect an IBM PC/AT or compatible computer.

6 AUTOMATION I/O connector

This is a connector for automatic system control.
For details, contact your SDDS dealer.

7 SYSTEM OUTPUTS connectors

Output analog audio signals, consisting of D/A converted digital audio signals read from the film or analog audio bypass input signals.

8 AUX-OUT connector

Output THX®-standard analog audio signals, consisting of D/A converted digital audio signals read from the film or analog audio bypass input signals. These connectors are connected in parallel with the SYSTEM OUTPUTS connectors 7.

9 SDDS REMOTE connector

Connect to an SDDS remote control unit.
For details, contact your SDDS dealer.

Notes on Use

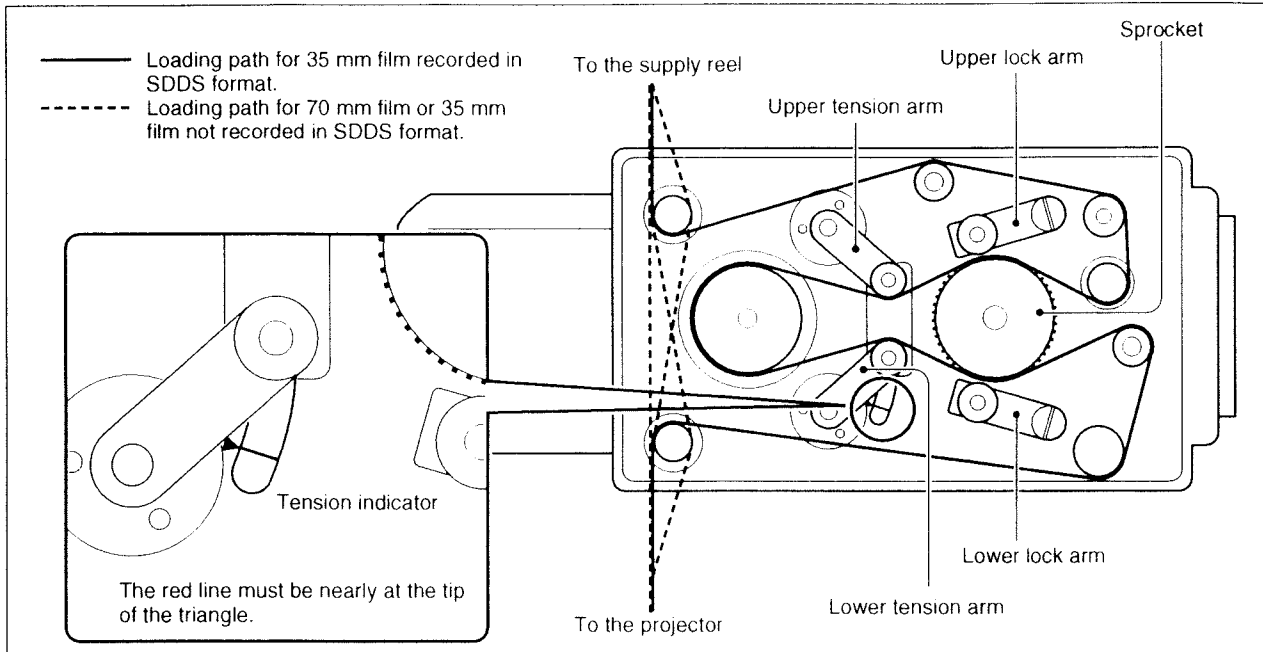
- Installation of this system must be carried out by the SDDS dealer.
- There are no user adjustments or user-replaceable parts inside the DFP-D2000; do not open the front panel.

Handling SDDS film

- Avoid marking the SDDS data tracks using either adhesive labels or ink. If it is essential, keep any marks within a single frame.
- The splice length should also be not more than a single frame.

Operation

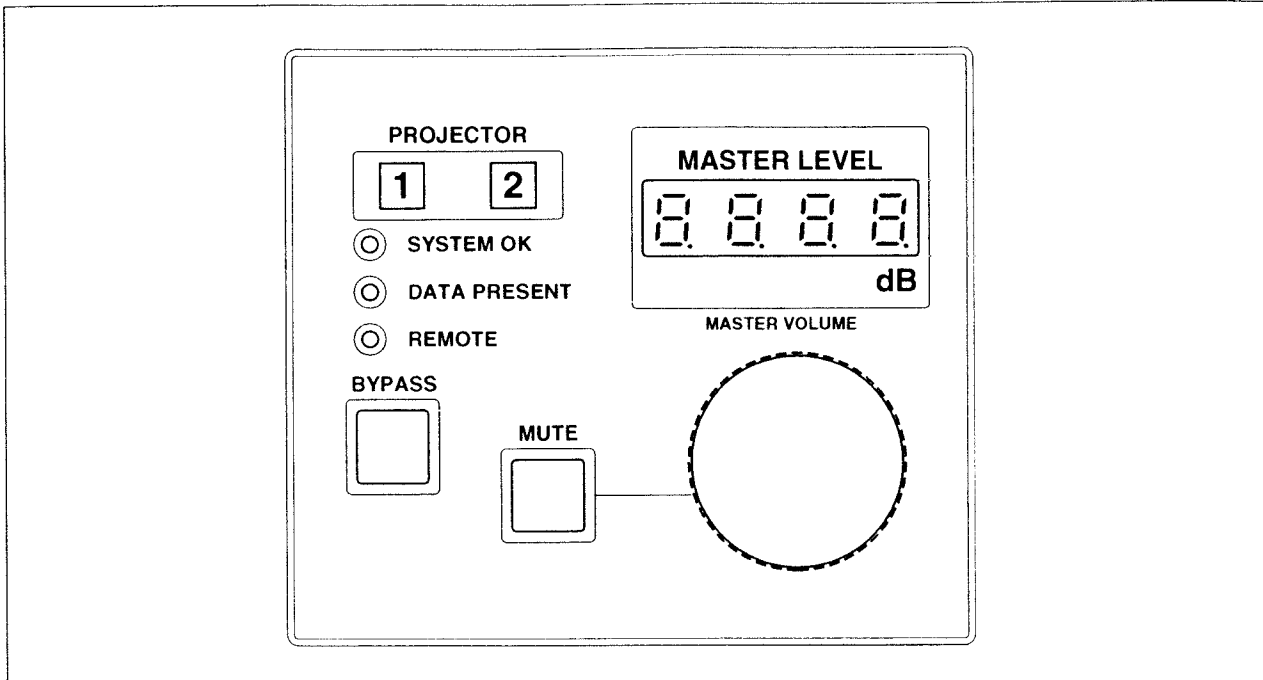
Loading Film



Film loading path in the DFP-R2000

- 1 Mount the supply reel and the takeup reel.
- 2 Open the front cover of the DFP-R2000 and the cover of the projector.
- 3 Raise the upper lock arm of the DFP-R2000, release the upper tension arm, and then lower the lower lock arm.
- 4 Pull out a suitable length of film from the supply reel, and feed it along the path indicated in the diagram, as follows.
35 mm film recorded in SDDS format: solid line in the diagram (indicated in the DFP-R2000 by a blue line)
70 mm film or 35 mm film not recorded in SDDS format: broken line in the diagram
- 5 Return the upper and lower lock arms to their original positions to tension the film.
- 6 Check to be sure that the red line of the tension indicator is at the tip of the triangle. If not, release the upper tension arm, adjust the film position so that the tension indicator red line is at the tip of the triangle, and return the tension arm to its original position.
- 7 Pass the film through the projector and take it up on the takeup reel, just as you would with ordinary movie film.
- 8 Close the front cover of the DFP-R2000 and the cover of the projector.

Operating the DFP-D2000



Control block of the DFP-D2000

To adjust the master level

Rotate the MASTER VOLUME dial.

To mute the audio output

Press the MUTE button. The button lights in red, and the output is muted.

To select hard bypass output of analog audio input

Press the BYPASS button.

The button lights in yellow, and analog audio signals input to the BYPASS INPUTS or AUX IN connectors are output without change from the SYSTEM OUTPUTS and the AUX-OUT connectors.

When using a changeover system with two projectors

One of the PROJECTOR indicators lights to show which of the projectors is currently in use.

If the SYSTEM OK indicator does not light

There is trouble somewhere in the system. Contact your SDDS dealer.

Note

To change the initial system settings after installation, or to make acoustic adjustments, use an IBM PC/AT or compatible computer connected to the system.

For details, contact your SDDS dealer.

Specifications

SDDS Digital Audio Signals

Number of channels	8
Channel assignments	Channel 1: Left Channel 2: Left center Channel 3: Center Channel 4: Right center Channel 5: Right Channel 6: Sub-woofer Channel 7: Surround left Channel 8: Surround right
Sampling frequency	44.1 kHz
Frequency response	20 Hz to 20 kHz ± 1.0 dB
Dynamic range	More than 90 dB
Distortion	Less than 0.07%
Crosstalk	Less than -80 dB
Output level	Low: -10 dBu balanced (adjustable on site) High: +4 dBu balanced (factory default)
Headroom	20 dB

Specifications

General

DFP-R2000 Digital Film Sound Reader

Power requirements	DC +24 V (1 A)
Power consumption	24 W
Operating temperature	5°C to 40°C (41°F to 104°F)
Operating humidity	10% to 90% (relative humidity)
Storage temperature	-20°C to +60°C (-4°F to +140°F)
Mass	10 kg (22 lb)
Dimensions (w/h/d; excluding projections)	325 mm × 158 mm × 232 mm (12 ⁷ / ₈ × 6 ¹ / ₄ × 9 ¹ / ₄ inches)
Film width	35 mm

DFP-D2000 Digital Film Sound Decoder

Power requirements	100 V AC (Japan) 120 V AC (United States and Canada) 230 to 240 V AC (Europe) 50/60 Hz
Power consumption	200 W (United States, Canada and Japan) 2.3 A (Europe)
Operating temperature	5°C to 40°C (41°F to 104°F)
Operating humidity	10% to 90% (relative humidity)
Storage temperature	-20°C to +60°C (-4°F to +140°F)
Mass	Approx. 14.5 kg (31 lb 15 oz)
Dimensions (w/h/d; including projections)	464 mm × 143 mm × 490 mm (18 ³ / ₈ × 5 ³ / ₄ × 19 ³ / ₈ inches)
EIA rack mount space	3 units
Lock-in time	1 second max.
Lock range	Rated speed ±5%
Sync drift	20 msec max.
Sync drift rate	10 Hz/sec max.

I/O Characteristics

DFP-R2000

READER I/O connector CCZ-A (1)

DFP-D2000

BYPASS INPUTS connectors

L, LC, C, RC, R, SW, SL, SR
XLR 3-pin, female (8)
Reference level +4dBu/-10dBu
Maximum level +24dBu/+10dBu
Impedance 10k Ω min.
Connected in parallel with AUX-IN
connector.

SYSTEM OUTPUTS connectors

L, LC, C, RC, R, SW, SL, SR
XLR 3-pin, male (8)
Reference level +4dBu/-10dBu
Maximum level +24dBu/+10dBu
Impedance 100 Ω max.
Connected in parallel with AUX-OUT
connector.

AUX-IN connector D-sub 25-pin, female (1)
Connected in parallel with BYPASS
INPUTS connectors.

AUX-OUT connector D-sub 25-pin, male (1)
Connected in parallel with SYSTEM
OUTPUTS connectors.

READER I/O connectors PROJ 1, PROJ 2
CCZ-A(2)

SDDS REMOTE connector D-sub15-pin, male (1)

RS-232C connector D-sub 9-pin, female (1)

AUTOMATION I/O connector D-sub 37-pin, male (1)

Specifications

Accessories and Related Equipment

Accessories supplied

DFP-R2000

Fly wheel (1 set)
Operation guide (1)
Reader cable (CCZ-A) (1)
Reader mount kit (1 set)

DFP-D2000

Operation manual (1)
Power cord (1)

Required equipment for a changeover system

For details, contact your SDDS dealer.

Required customer supplied equipment (when external control is required)

IBM PC/AT or compatible

Design and specifications are subject to change without notice.