Pioneer

Max. 40X CAV ATAPI
CD-ROM DRIVE UNIT

DR-944／DR914
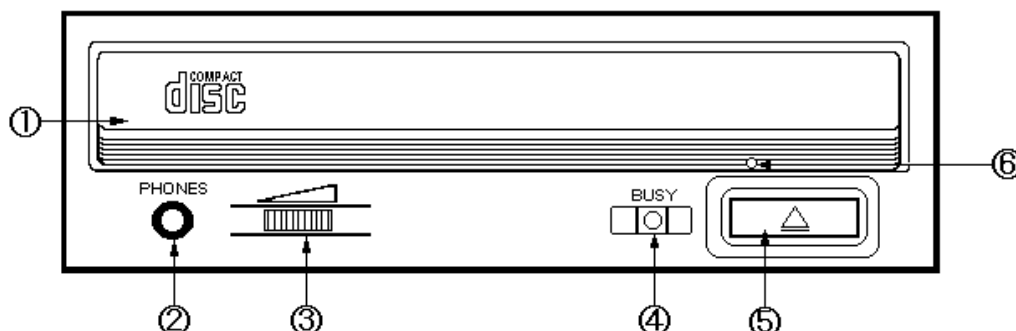
Operating Instructions

Pioneer　Electronic　Corporation

Standard Features

- Internal 5.25inch Half-Height CD-ROM Drive

- ATAPI Interface (SFF-8020)

- Max. 40X Data Transfer

  17.5X(inner side of a disc) to 40X(outer side of a disc) maximum , 28.8X(average)

- Power Tray Loading

- Conforms to MPC Level 3 specifications

- Low Vibration Mechanism

- High Speed Access :   Access Time   70 msec (Random Average)

- High Speed Seek   :   Seek Time   60 msec (Random Average)

- Buffer Memory Size :   128 kBytes

- IDE Data Transfer Mode

  Supports PIO Mode 4 & DMA Multi Word Mode 2 , Ultra DMA 33

- Supports KODAK Photo CD

- Supports Single and Multi-Session

- Supports CD-XA Ready

- Supports CD-I Ready

- Supports CD Extra

- Supports Video CD

- Supports to read CD-RW disc

- Supports Power Save Mode

- Stereo Analog Audio Line Output

- Digital Audio Through ATAPI (Read CD /DA)

- Head Phone Output & Volume Control Knob   (Front Panel)

- Horizontal / Vertical Operation

- Forced Ejection

Name of Parts/Function/Setting

Front Panel

1. **Disc Tray**

   Tray loading-unloading is done by pressing the eject button.
   Place the CD-ROM onto the tray with the label facing up.
   Place a disc onto the inner lower groove on the tray in case an 8cm disc is used.
   Press the eject button or push the front part of the tray gently to load disc tray.

2. **Head-Phone Jack** (PHONES)

   Stereo mini jack for head-phone.
   Adjust "Volume Control Knob" minimum position before head-phone is connected.
   The audio output of rear panel is active even when head-phone plug is inserted to this jack.

3. **Volume Control Knob** (Head-Phone Level)

   This is the volume control knob for adjusting sound level for head-phone.
   When the knob is turned to the right, the head-phone volume goes up, and turned to the left, the volume goes down.

4. **BUSY Indicator**

   It is lit when data on the disc is accessed.

5. **Eject Button**

   This button is used to load and unload the tray.
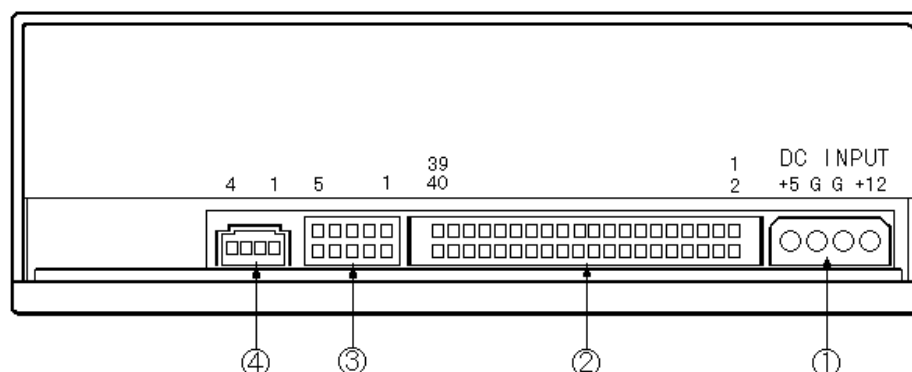
6. **Forced Ejection Hole**

   When a disc is stacked in the drive and the eject button does not work to open the tray, insert a stiff rod into this hole and push gently so that the tray comes out. Unload the tray by hand then remove the disc.
   Do not use the Forced Eject Hole except emergency case, use the eject button in normal operation.
   Before executing this operation, turn off the power supply and wait more than 1 minute till disc rotation is stopped.

   Name of Parts/Function/Setting

Rear Panel

1. DC Input

Pin	Name	Function
1	+12	Power supply input of DC +12V
2	G	Ground
3	G	Ground
4	+5	Power supply input of DC +5V

2. ATAPI Interface

It should be connected with the Enhanced-IDE port of the computer. Use 40pin flat type cable.
Length of the cable is less than 18inchs(46cm) according to the ATA specifications.
It may cause data transfer error, if longer cable more than above value is used.

Pin	Name	Pin	Name	Pin	Name	Pin	Name
1	RESET-	11	DD3	21	DMARQ	31	INTRQ
2	GND	12	DD12	22	GND	32	IOCS16-
3	DD7	13	DD2	23	DIOW-	33	DA1
4	DD8	14	DD13	24	GND	34	PDIAG-
5	DD6	15	DD1	25	DIOR-	35	DA0
6	DD9	16	DD14	26	GND	36	DA2
7	DD5	17	DD0	27	IORDY	37	CS1FX-
8	DD10	18	DD15	28	CSEL	38	CS3FX-
9	DD4	19	GND	29	DMACK-	39	DASP-
10	DD11	20	(KEYPIN)	30	GND	40	GND

Remarks: The minus sign indicates active low.

Name of Parts/Function/Setting

3.   Device Configuration Jumper

Switch turns on by inserting short socket.
Make sure that drive power is turned off before jumper setting is changed.
Only MA is "on" at the time of shipping from the plant.

Pin	Name		Function
1	MA	on	The drive is used in **Master Mode**.
2	SL	on	The drive is used in **Slave Mode**.
3	CS	on	Using "**Cable Select**" function.
4	Reserved		
5	Reserved		

4.   Audio Output

A connector for output of analog audio.
This connector is compatible with "Molex 70553", choose a connection cable which matches with the connector.

Pin	Name	Function
1	L	Left channel audio output
2	G	Ground
3	G	Ground
4	R	Right channel audio output

Specifications

1. Disc Format

- CD-ROM Mode 1
- CD-ROM XA Mode2 (form 1, form2)
- Photo CD (single and multiple session)
- Video CD (4.4x – 10x)
- CD-DA (4.4x – 10x at Audio Play, 8.8x – 20x at Read CD-DA)
- CD-Extra
- CD-RW (read only, 4.4x –10x)
- CD-I Ready

2. Disc Size

- 12 cm
- 8 cm (4X at data disc, Horizontal operation only)

  Precautions on playing CD singles(8cm discs)

  An 8cm disc can be played only when the drive is horizontal condition and the disc is set in the 8cm groove on the disc tray at loading.

  Do not use an adapter for 8cm disc in any conditions for this drive, or malfunction may occur.

3. Data Transfer Rate

Parameter		Min.	Typ.	Max.	Unit	Note
Sustained	inner	2250	2415	2625	kBytes/sec	Max. 40X CAV Mode
	outer			6000	kBytes/sec	
Burst		4.0		33.3	MBytes/sec	

Maximum data transfer rate is specified with a disc of 1.2m/s linear velocity.

4. Buffer Memory Size

- 128 kBytes

5. Access Time/Seek Time

Parameter	Min.	Ave.	Max.	Unit	Note
Access Time		70	140	msec	Random Average CD-ROM Mode1 Disc
Random Seek Time		60	90	msec	Random Average
Full Stroke Seek Time		160	300	msec	

Specifications

6. Initializing Time / Starting Time / Finishing Time

Parameter	Specification	Note
Initializing Time	Less than 10 sec	The period from a disc is set in the drive till it becomes pause condition after initialization.
Starting Time	Less than 10 sec	The period from stop condition after finishing initialization till it becomes pause condition by executing start command.
Stop Time	Less than 7 sec	The period from pause condition till disc rotation is stopped by issuing stop command.

7. Loading Time / Unloading Time

Parameter	Specification	Note
Loading Time	Less than 4sec	The period from a disc starts loading till it is clumped in the drive.
Unloading Time	Less than 4sec	The time of disc unloading with stop condition by pressing the eject button.

8. Audio Characteristic

Item		Specification	Note
Output level	Line out	0.7 ±0.1 Vrms	10 k ohm Load
	Head phone Out	0.45 ±0.2 Vrms	32 ohm Load
S/N Ratio	Line out	Over 80 dB	JIS A-Weighted 20kHz LPF ON
Channel Separation	Line out	Over 65 dB	
Frequency Response	Line out	20Hz~20kHz	+1/-3 dB
THD	Line out	Less than 0.1%	1kHz 0dB 20kHz LPF ON

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