

## 1. GENERAL

This is the hardware specification of the TEAC FD-235HS, 3.5" double-sided 5.3 track/mm [135tpi] micro floppy disk drive (hereinafter referred to as SFD) with a data capacity of 2MB/1MB (2 modes) and a SCSI interface board (hereinafter referred to as FC-1).

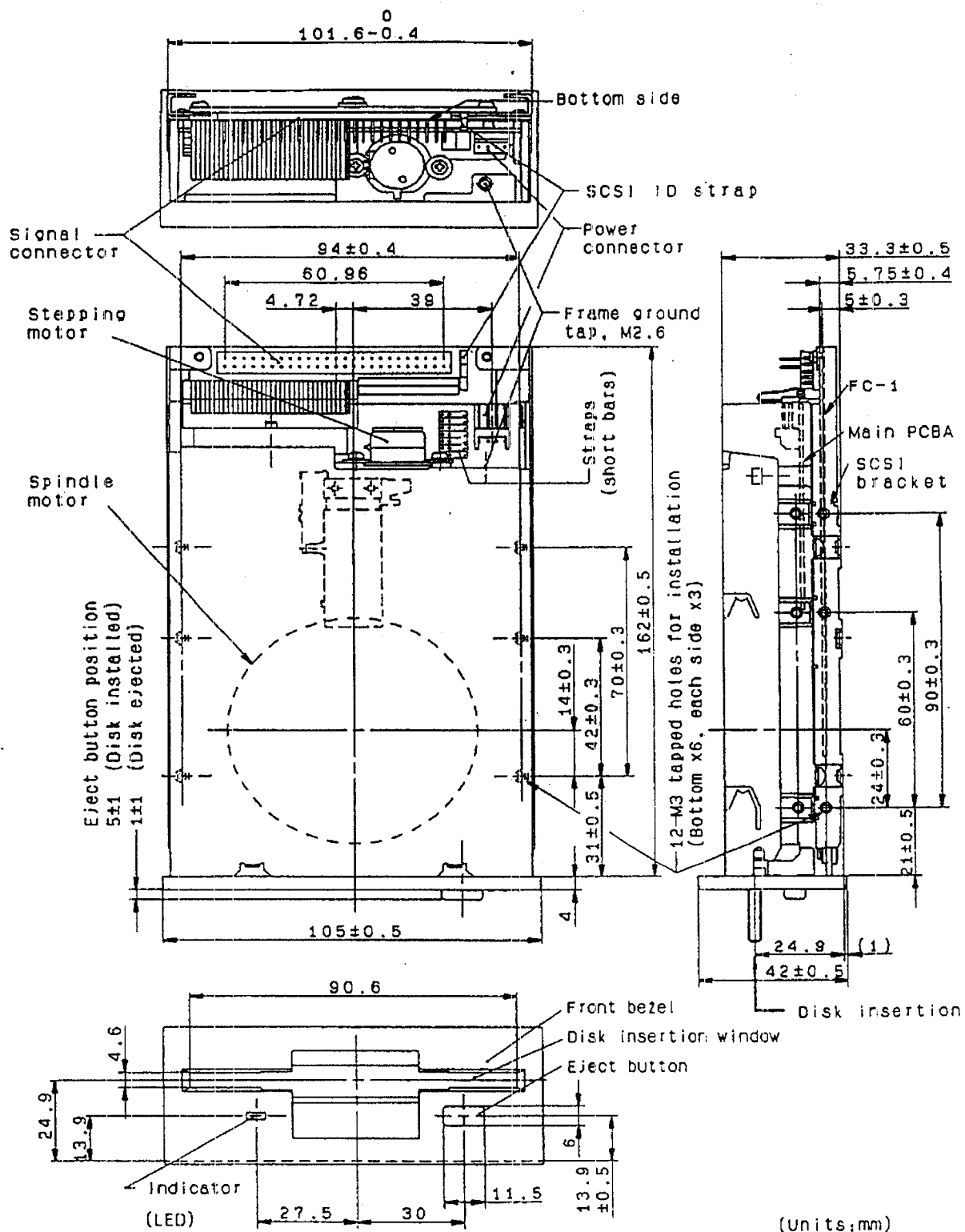
For the specification of the software, refer to "FC-1-11 Software Specification".

The outline of this SFD is shown in Table 1.

(Table 1) Specification outline

Model name	FD-235HS-1011	
TEAC P/N	19308110-11	
ROM P/N	13703857-11	
Safety standard	UL, CSA & TÜV	
Operation modes	1MB mode, write/read	2MB mode, write/read
Disk used	Normal density (DD)	High density (HD)
Data transfer rate	250k bits/s	500k bits/s
Disk speed	300rpm	
Track density	5.3 track/mm [135tpi]	
Required power	+5V single (4.75~5.25V)	
Front bezel & flap	Beige (AT)	
Eject button	Beige (AT)	
LED indicator color	Amber	
Signal interface	SCSI (Small Computer System Interface: ANSI standard X3.131-1986)	
Terminator	Provided (at factory), 220/330 $\Omega$ $\pm$ 5%, detachable	
Specification of parity	ON (at factory), ON/OFF switchable	
Specification of SCSI	ID=0 (at factory), SCSI ID 0 to 7 switchable	
Logical Unit Number	LUN=0 (at factory)	
Internal data buffer capacity	31K bytes	

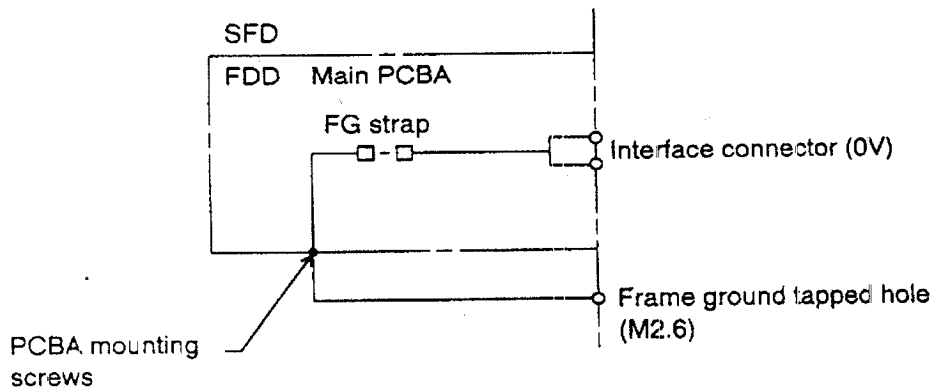
Using two types of disk, this SFD permits two write/read modes with unformatted data capacities of 2M/1M bytes. The interface with the host system is SCSI. The SFD has a switch for the detection of the high density identification hole (HD hole) in the disk and straps for selecting the density mode system (refer to 10.8).



(Fig.4) External view

## 5.2 Frame Grounding

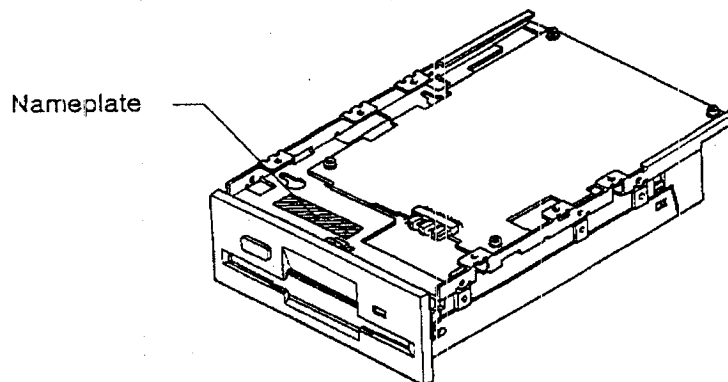
- (1) The SFD frame is electrically connected to DC 0V by FG strap on the main PCBA. (See Fig.5)
- (2) If it is required to separate the frame from DC 0V, set the FG strap to off-state.
- (3) If it is required to ground by other cabling method, use M2.6 tapped hole at the rear side of the SFD. (See Fig.4)



(Fig.5) Frame ground internal connection

## 5.3 Nameplate

The location where the nameplate is attached onto the SFD is shown in Fig. 6.



(Fig.6) Location where the nameplate is attached

**Note:** Although the nameplate is attached on the rear (interface connector side) of the SFD, this nameplate is for the base FDD (the SFD minus the SCSI board, bracket, etc.) and does not indicate the model number, model name or serial number of the SFD.

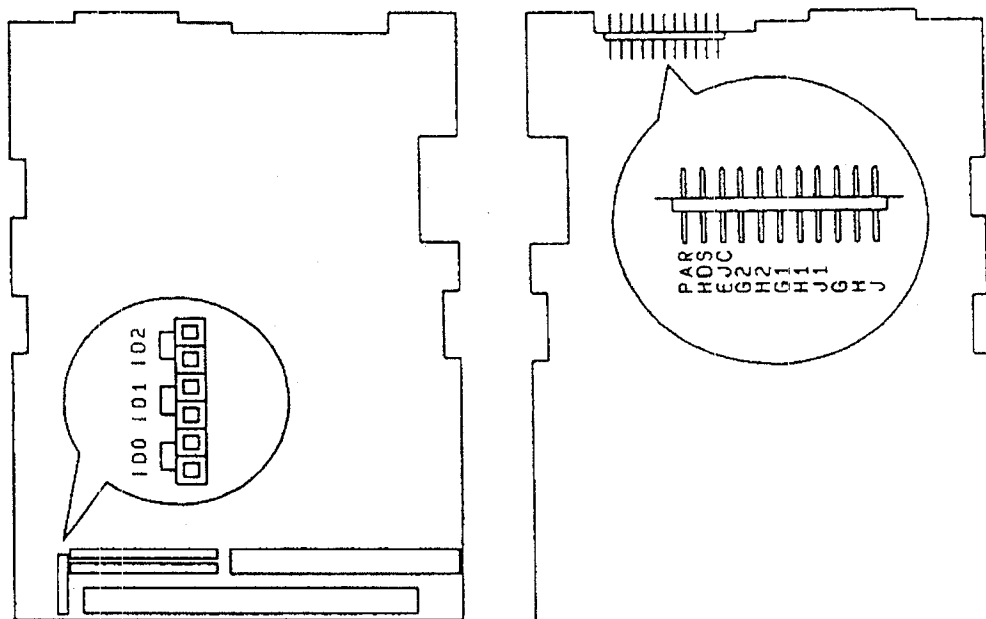
## 10.8 Customer Selectable Straps

### 10.8.1 Straps setting on the FC-1 board

There are straps on the FC-1 board as shown in Fig.28 and the state where the shorting bar is inserted is the on state. Their functions are described below.

Factory-set is follows.

H, PAR, ID0 - ID2: ON



(Shown when viewed from the chip side)

(Fig.28) Straps arrangement

#### (1) ID Straps Setting

Performs SCSI ID setting with "ID0", "ID1", and "ID2" on the PCBA. The relation between "ID0 - ID2" settings and the SCSI ID addresses are shown in Table 22.

"ID0 - ID2" are all factory-set to "ON" (device address = 0).

(Table 22) SCSI ID setting

SCSI ID ADDRESS	ID2	ID1	ID0
0	ON	ON	ON
1	ON	ON	OFF
2	ON	OFF	ON
3	ON	OFF	OFF
4	OFF	ON	ON
5	OFF	ON	OFF
6	OFF	OFF	ON
7	OFF	OFF	OFF

(2) SCSI parity strap

"PAR" on the PCBA is the parity strap. When "PAR" is ON, the FC-1 performs parity checking (odd number) of input data (-DB0 ~ -DB7, -DBP). Parity checking does not take place when "PAR" is OFF.

It is factory-set to "ON".

(3) J/H/G/J1/H1/G1/H2/G2 straps

These straps indicate an FDD type as shown in Table 10-4 and the LUN 0 FDD type is set by J/H/G straps, the LUN 1 FDD type by J1/H1/G1 straps or the LUN 2 FDD type by H2/G2 straps. Here, the 1MB mode is valid at all times irrespective of the LUN number.

Strap "H" is factory-preset to ON.

(Table 23) Setting the FDD type

Strap	G/G1/G2	H/H1/H2	J/J1
Mode	1.6MB mode	2MB mode	4MB mode

(4) HDS strap

Sets the initial state whether or not the mode auto setting function according to the disk type loaded in the SFD is valid using the HDS strap. If the HDS strap is ON, it is necessary to set the H1/H2 straps.

The strap is factory-preset to OFF and it is not possible to change this strap.

"HDS": ON .... Valid

OFF .... Invalid

(5) EJC strap

(Setting the output signal at pin 4 in the FD IF)

Sets the initial state whether or not the media eject function is valid using the EJC strap.

The strap is factory-preset to OFF and it is not possible to change this strap.

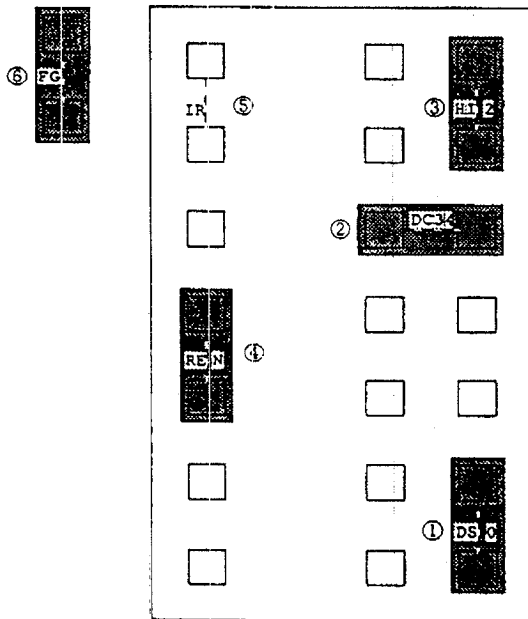
"EJC": ON .... Valid

OFF .... Invalid

### 10.8.2 Strap setting on the FDD main board

The straps on the FDD main board and an outline of their functions are given in Table 24.

If the settings of straps other than HA/IR/FG on the FDD main board are changed, the operation of this SFD is not guaranteed.



Position	Name	Outline of functions
①	DS0	DRIVE SELECT 0 input
②	DC34	PIN 34: DISK CHANGE output
③	HI2	PIN 2: HD IN input
④	REN	Auto-recalibration enable
⑤	IR	LED active condition: DRIVE SELECT * READY state
⑥	FG	Frame ground

Note: The shaded positions are the factory-preset positions.

(Table 24) Straps on the FDD main board and their functions

#### (1) HI2 strap

By using HI2 strap, the FDD density mode setting signal (HD IN) to set the FDD density mode is allocated at the pin.

The level of the mode setting signal is shown in Table 25.

For details of how to set the method of the SFD, refer to 10.7.

(Table 25) Setting signal level

Strap setting		Setting mode	FDD density mode setting signal level	Medium identification signal level	
FC-1	FDD		HD IN *(PIN 2)	HD OUT	
HDS	HI2			*(PIN 4)	*(PIN 2)
OFF	ON	1MB	LOW	LOW	—
		2.0MB	HIGH	HIGH	—

Note: With PIN 2 and 4 (marked "\*\*") of the FDD interface signal, the meaning and true level are defined by bytes 26 and 27 of PAGE code 5 of the MODE SELECT parameter.

(2) IR strap

With the IR strap, one of the following two front bezel indicator (LED) lighting conditions can be selected.

However, to prevent the lighting due to the polling operation of the DRIVE SELECT signal, the indicator does not light for 3.1ms immediately after the DRIVE SELECT signal is made true under any conditions.

(Table 26) Selecting the front bezel indicator lighting conditions

IR strap	Front bezel indicator (LED) lighting conditions
—	DRIVE SELECT
ON	DRIVE SELECT * FDD READY state

Note: Symbol of "—" indicates the state when the strap = OFF.

(3) FG strap

Connects the FDD frame to 0V DC. (For details, refer to 5.2)