

SCOPE

These specifications apply to the TEAC MT-2ST/45S2 Streaming Cassette Magnetic Tape Unit (hereinafter referred to as the MTU).

MAGNETIC TAPE USED

This unit uses the TEAC CT-500H high density magnetic tape cassettes (hereinafter referred to as the cassette, tape, or cassette tape), or compatible magnetic tape approved between the customer and TEAC.

CONFIGURATION

The MT-2ST/45S2 consists of the MTU and accessories sold separately. An interface controller (PCBA IC) is incorporated in the MTU.

MTU Types and Major Functions

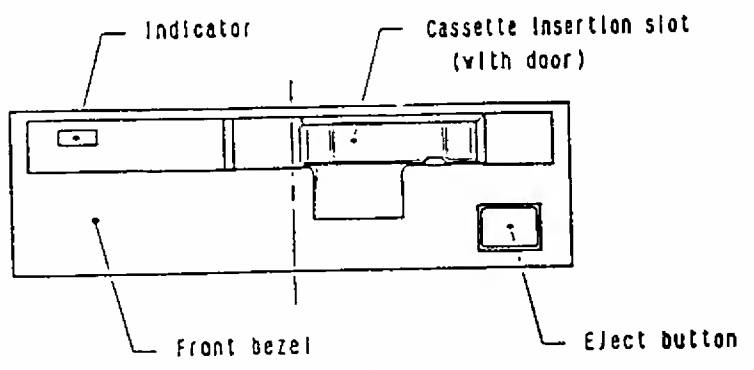
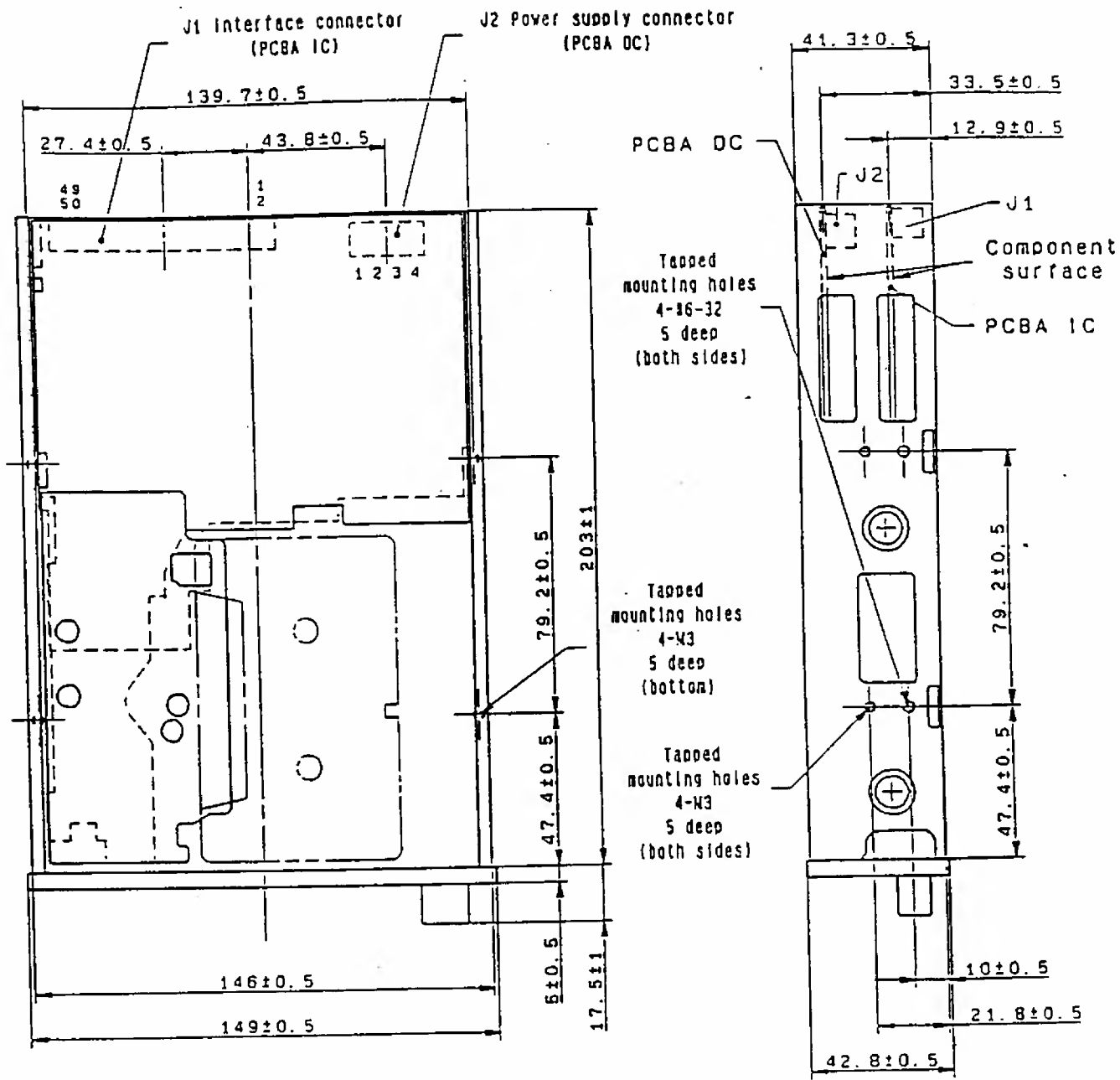
Name	Part No.	Tape speed	Head
MT-2ST/45S2-27	19305060-27	90 ips	Ferrite head

MT-2ST/45S2 MTUs

CONSTRUCTION

External Construction

- (1) Height : 41.3 ± 0.5 mm
- (2) Width : 146 ± 0.5 mm
- (3) Depth : 203 ± 1 mm
- (4) Weight : Approx. 1.2 kg
- (5) Cooling system : Natural air ventilation
- (6) Direction of installation : As mentioned below.
 - (a) The cassette tape may be inserted horizontally from the front. However, this does not permit the eject button to be positioned on the left.
 - (b) The cassette tape may be inserted vertically from the front. However, this does not permit the eject button to be positioned down.
 - (c) The direction of insertion in items (a) and (b) should be within 15 degrees of the direction of left of the front bezel.
- (7) Mounting method : The drive is fixed with screws through the mounting holes at the sides and bottom. Refer to Fig. 101 for the positions of the mounting holes.
- (8) Coating color of front bezel : Black (Munsell N1) as a standard
- (9) Indicator LED color : Red
- (10) External view : Refer to Fig. 10.



(Unit :mm)

Fig. 10 MTU External View

ENVIRONMENTAL CONDITIONS

(1) Ambient temperature

- (a) In operation : 5°C to 45°C
- (b) Nonoperating : -25°C to 60°C

(2) Temperature gradient

- (a) In operation : Less than 15°C/hour (noncondensation)
- (b) Nonoperating : Less than 30°C/hour (noncondensation)

(3) Relative humidity

- (a) In operation : 20 to 80% (noncondensation)
Maximum wet-bulb temperature ... 26°C
- (b) Nonoperating : 10 to 90% (noncondensation)

(4) Vibration

- (a) In operation : Less than 0.2G (5 to 50 Hz)
- (b) During transportation : Less than 2G (5 to 50 Hz)

(5) Shocks

- (a) In operation : Less than 5G (less than 10 msec)
- (b) During transportation : Less than 40G (less than 10 msec)

(6) Transport condition

- : The general rule level II of the proper package goods test method in JIS-Z0200 is satisfied when the specified packing case is used.

OPERATIONAL CHARACTERISTICS

Tape Drive System Operational Characteristics

- (1) Tape speed : 90 ips (2286 mm/sec)
- (2) Long-term speed variation : $\pm 4\%$
(LSV)
- (3) Instantaneous speed : $\pm 4\%$
variation (ISV)

Control Characteristics

- (1) Average recording/reading speed : Nominal 86.3 K bytes/sec.
(in streaming condition)
- (2) Block length : 512 bytes
- (3) Buffer memory : 50 blocks
- (4) Retry count at recording : 16 max.
- (5) Retry count at reading : 16 max.
- (6) Repositioning time : Approx. 1 second
- (7) Maximum rewinding time : Approx. 70 seconds (CT-500H)

Interface Characteristics

- (1) Interface : In compliance with SCSI
(ANSI X3.131-1986)

- (2) Data transfer capability (transfer speed in case the host system responds
in the shortest time)
 - (a) At recording : 600 K bytes/s
 - (b) At reading : 600 K bytes/s

Reliability

- (1) Mean time between failures : 10,000 POH or more
(MTBF) (Duty cycle: 4.2%)

- (2) Mean time to repair (MTTR) : Less than 30 min.

- (3) Error rate
 - (a) Soft error : Once per 10^8 bits
 - (b) Hard error : Once per 10^{11} bits

SCOPE

These Specifications apply to the TEAC MT-2ST/45D Streaming Cassette Magnetic Tape Unit (hereinafter referred to as the MTU).

MAGNETIC TAPE USED

This unit uses TEAC CT-500H high density magnetic tape cassettes (hereinafter referred to as the cassette, tape or cassette tape), or comparable magnetic tape approved between the customer and TEAC.

CONFIGURATION

The MT-2ST/45D consists of the MTU and accessories sold separately. An interface controller (PCBA IC) is incorporated in the MTU.

MTU Types

Name	Commodity No.	Tape speed	Head
MT-2ST/45D-14	19305060-14	90ips	Ferrite head

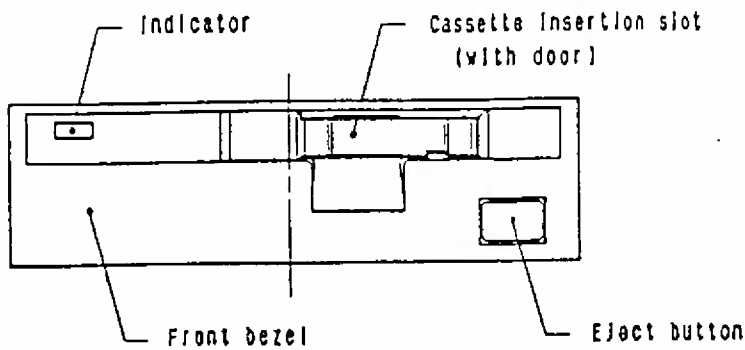
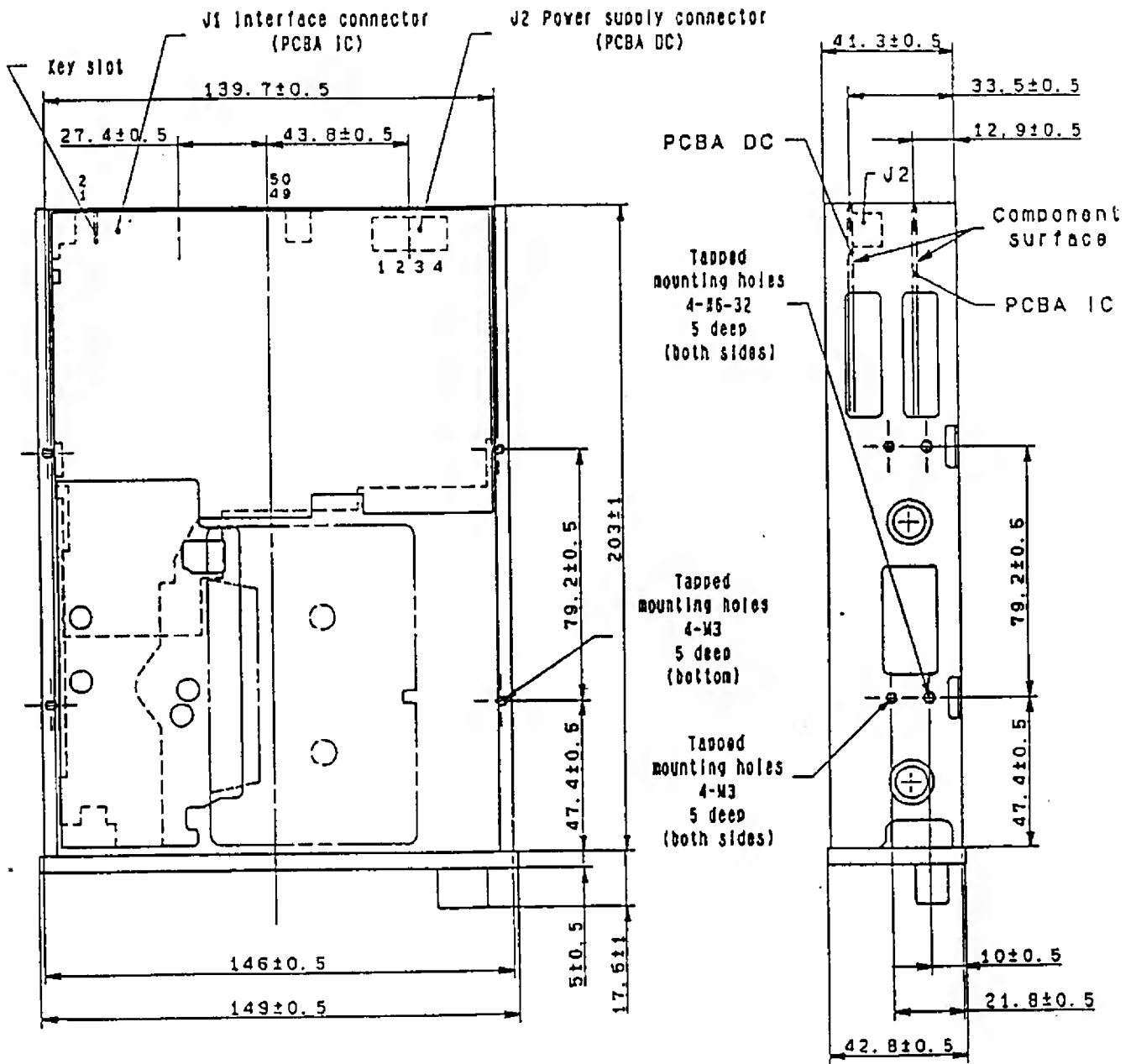
Accessories

The items listed in Table 102 below are all sold separately from the MTU.

CONSTRUCTION

External Construction

- (1) Height : 413 ± 0.5 mm
- (2) Width : 146 ± 0.5 mm
- (3) Depth : 203 ± 1 mm (Excluding the interface connector projection)
- (4) Weight : Approx. 1.2 kg
- (5) Cooling system : Natural air ventilation.
- (6) Direction of installation : As mentioned below.
- (a) The cassette tape may be inserted horizontally from the front. However, this does not permit the eject button to be positioned on the left.
- (b) The cassette tape may be inserted vertically from the front. However, this does not permit the eject button to be positioned down.
- (c) The direction of insertion in items (a) and (b) should be within 15 degrees of the direction of left of the front bezel.
- (7) Mounting method : The drive is fixed with screws through the mounting holes at the sides and bottom. (Refer to Fig. 101.)
- (8) Coating color of front bezel : Black (Munsell N1)
- (9) Indicator LED color : Red
- (10) External view : Refer to Fig. 101.



(Unit :mm)

(Fig. 101) MTU External View

ENVIRONMENTAL CONDITIONS

(1) Ambient temperature

(a) In operation : 5°C - 45°C

(b) Nonoperating : -25°C - 60°C

(2) Temperature gradient

(a) In operation : Less than 15°C/hour (noncondensation)

(b) Nonoperating : Less than 30°C/hour (noncondensation)

(3) Relative humidity

(a) In operation : 20 - 80% (noncondensation) Maximum
wet-bulb temperature ... 26°C

(b) Nonoperating : 10 - 90% (noncondensation)

(4) Vibration

(a) In operation : Less than 0.2G (5 - 50 Hz)

(b) During transportation : Less than 2G (5 - 50 Hz)

(5) Shocks

(a) In operation : Less than 5G (less than 10 msec)

(b) During transportation : Less than 40G (less than 10 msec)

OPERATIONAL CHARACTERISTICS

Tape Drive System Operational Characteristics

(1) Nominal tape speed

(a) MT-2ST/ 45D-14 : 90 ips (2286 mm/sec)

(2) Long-term speed variation : $\pm 4\%$
(LSV)

(3) Instantaneous speed : $\pm 4\%$
variation (ISV)

Control Characteristics

(1) Average data transfer speed

(a) MT-2ST/ 45D-14 : Nominal 86.3K bytes/sec

(2) Block length : 512 bytes

(3) Buffer memory : 3 buffers

(4) Retry count at recording : 16 max.

(5) Retry count at reading : 16 max.

(6) Repositioning time

(a) MT-2ST/ 45D-14 : Approx. 1 sec

(7) Maximum rewinding time : Approx 70 seconds

Reliability

(1) Mean time between failure : 10,000 POH or more (Duty cycle: 4.2%)
(MTBF)

(2) Mean time to repair (MTTR) : Less than 30 min.

(3) Error rate

(a) Soft error : Once per 10^8 bits

(b) Hard error : Once per 10^{11} bits

GENERAL

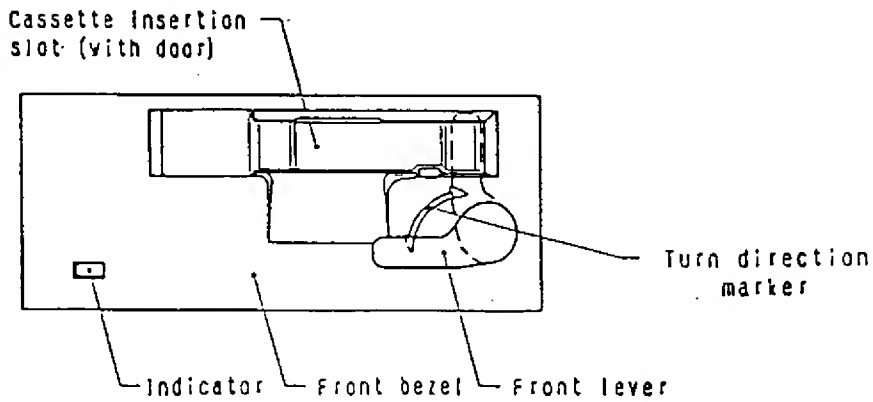
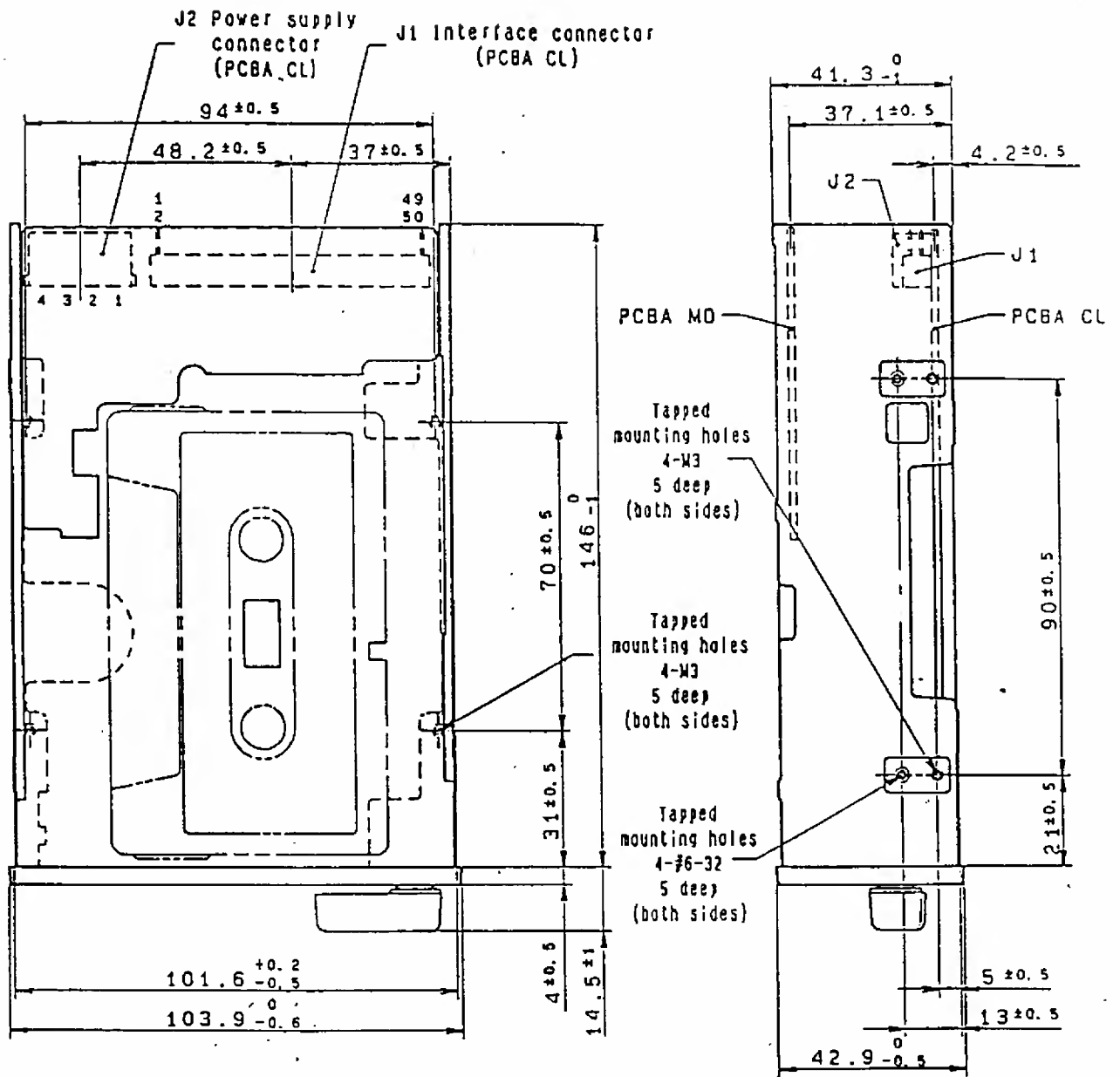
The present specifications apply to the TEAC MT-2ST/N50 Streaming Cassette Magnetic Tape Unit (hereinafter, referred to as the MTU). Table 1 shows the general specifications of the MTU.

Model	MT-2ST/N50-00	MT-2ST/N50-01
TEAC part number	19305070-00	19305070-01
Applicable safety standard		
Tape used	CT-600N or equivalent (recording & reading) CT-500H, CT-600H or equivalent (reading only)	
Form factor	3.5 inches (height; 41.3 mm)	
Front bezel color	Black	Light gray
Indicator LED color	Amber	
Recording format	In compliance with D/CAS-85 (17 tracks)	
Recording density	16000 frpi (12800 bpi)	
Formatted data capacity	Nominal 155.7 M bytes	
Readable format	D/CAS-25 (9 tracks), and D/CAS-85 (17 tracks)	
Tape speed	90 ips (2286 mm/sec)	
Power supply	DC +5V, DC +12V	
Interface	In compliance with SCSI (ANSI X3.131-1986)	
Specification of parity strap	S3: short	
Specification of SCSI ID	SCSI ID = 0	
Terminator	Provided.	

(Table 101) General specifications

External Construction

- (1) Height : $41.3 \begin{smallmatrix} 0 \\ -1 \end{smallmatrix}$ mm
- (2) Width : $101.6 \begin{smallmatrix} +0.2 \\ -0.5 \end{smallmatrix}$ mm
- (3) Depth : $146 \begin{smallmatrix} 0 \\ -1 \end{smallmatrix}$ mm
- (4) Weight : Approx. 650g
- (5) Cooling system : Natural air ventilation
- (6) Direction of installation : As mentioned below.
- (a) The cassette tape may be inserted horizontally from the front. However, this does not permit the eject lever to be positioned on the left.
- (b) The cassette tape may be inserted vertically from the front. However, this does not permit the eject lever to be positioned down.
- (c) The direction of insertion in items (a) and (b) should be within 15 degrees of the direction of lift of the front bezel.
- (7) Mounting method : The drive is fixed with screws through the mounting holes at the sides and bottom. Refer to Fig. 101 for the positions of the mounting holes.
- (8) Color of front bezel : Refer to Table 101.
- (9) Indicator LED color : Refer to Table 101.
- (10) External view : Refer to Fig. 101.



(Unit: mm)

(Fig. 101) MTU External View

ENVIRONMENTAL CONDITIONS

(1) Ambient temperature

- (a) In operation : 5°C to 45°C
- (b) During storage or transportation : -25°C to 80°C

(2) Temperature gradient

- (a) In operation : Less than 15°C/hour (non-dewing)
- (b) During storage or transportation : Less than 30°C/hour (non-dewing)

(3) Relative humidity

- (a) In operation : 20 to 80% (non-dewing)
Maximum wet-bulb temperature; 26°C
- (b) During storage or transportation : 10 to 90% (non-dewing)

(4) Vibration

- (a) In operation : Less than 0.5G (5 to 100 Hz 3 minutes sweep)
Less than 0.25G (100 to 500 Hz 3 minutes sweep)
- (b) Nonoperating : Less than 2G (5 to 50 Hz 3 minutes sweep)

(5) Shocks

- (a) In operation : Less than 5G (less than 10 msec)

- (b) Nonoperating : Less than 50G (less than 10 msec)

- (6) Transport conditions : The general rule level II of the proper package goods test method in JIS-20200 is satisfied, when specified packing case is used.

OPERATIONAL CHARACTERISTICS

Tape Drive System Operational Characteristics

- (1) Tape speed : 90 ips (2286 mm/sec)
- (2) Long-term speed variation (LSV) : +4%
- (3) Instantaneous speed variation (ISV) : +4%
- (4) Maximum rewinding time : Approx. 80 sec (with CT-600N used)
- (5) Repositioning time : Approx. 1 sec

Control Characteristics

- (1) Recording/reading data format
 - (a) Recording and reading : In compliance with D/CAS-85 (17 tracks)
 - (b) Reading only : In compliance with D/CAS-25 (9 tracks)
- (2) Average recording/reading speed
 - (a) D/CAS-85 (17 tracks) : Nominal 116.2 K bytes/sec
(in streaming condition)
 - (b) D/CAS-25 (9 tracks) : Nominal 86.3 K bytes/sec
(in streaming condition)
- (3) Block length : 512 bytes (fixed)
- (4) Buffer memory : 50 blocks

- (5) Retry count at recording : Max. 15 times
- (6) Retry count at reading : Max. 16 times
- (7) Timing margin check
(at recording) : Center position $\pm 0.125t$
($t = 1$ bit interval)

Interface Part

- (1) Interface : In compliance with SCSI (ANSI X3.131-1986)
- (2) Data transfer capacity (average transfer speed in case the host system responds in the shortest time)
 - (a) At recording : 500 K bytes/sec
 - (b) At reading : 500 K bytes/sec

Reliability

- (1) Mean time between failures (MTBF) : 10,000 POH or more
- (2) Mean time to repair (MTTR) : Less than 30 min
- (3) Error rate
 - (a) At D/CAS-85 format reading
 - i) Soft error : Once per 10^7 bits
 - ii) Hard error : Once per 10^{12} bits

GENERAL

The present specifications apply to the TEAC MT-2ST/F50 Streaming Cassette Magnetic Tape Unit (hereinafter, referred to as the MTU). Table 101 shows the general specifications of the MTU.

Model	MT-2ST/F50-000	MT-2ST/F50-001
TEAC part number	19305080-00	19305080-01
Safety standards	Now filing for UL, CSA approval	
Tape used	CT-600F or equivalent (write & read) CT-500H, CT-600H, CT-600N or equivalent (read only)	
Form factor	3.5 inches (height; 41.3mm)	
Front bezel color	Black	Light gray
Indicator LED color	Amber	
Recording format	In compliance with D/CAS-103 (21 tracks)*1	
Flux (Data) density	48,000ftpi (38,400bpi)	
Backup time	Approx. 45 minutes (with CT-600F, 21 tracks, streaming)	
Formatted data capacity*2	Nominal 600M bytes	
Readable formats	D/CAS-25 (9 tracks), D/CAS-85 (17 tracks), and D/CAS-103 (21 tracks)	
Tape speeds	90ips (2,286mm/sec) and 60ips (1,524mm/sec)	
Power supplies	DC +5V, DC +12V	
Interface	In compliance with SCSI (ANSI X3.131-1986)	
Specification of parity strap	S3: short	
Specification of SCSI	SCSI ID = 0	
Terminator	Provided	

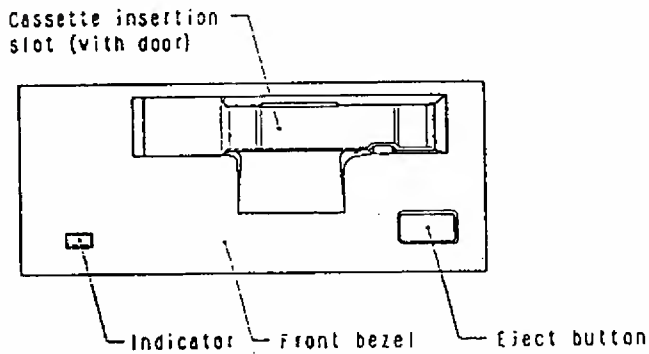
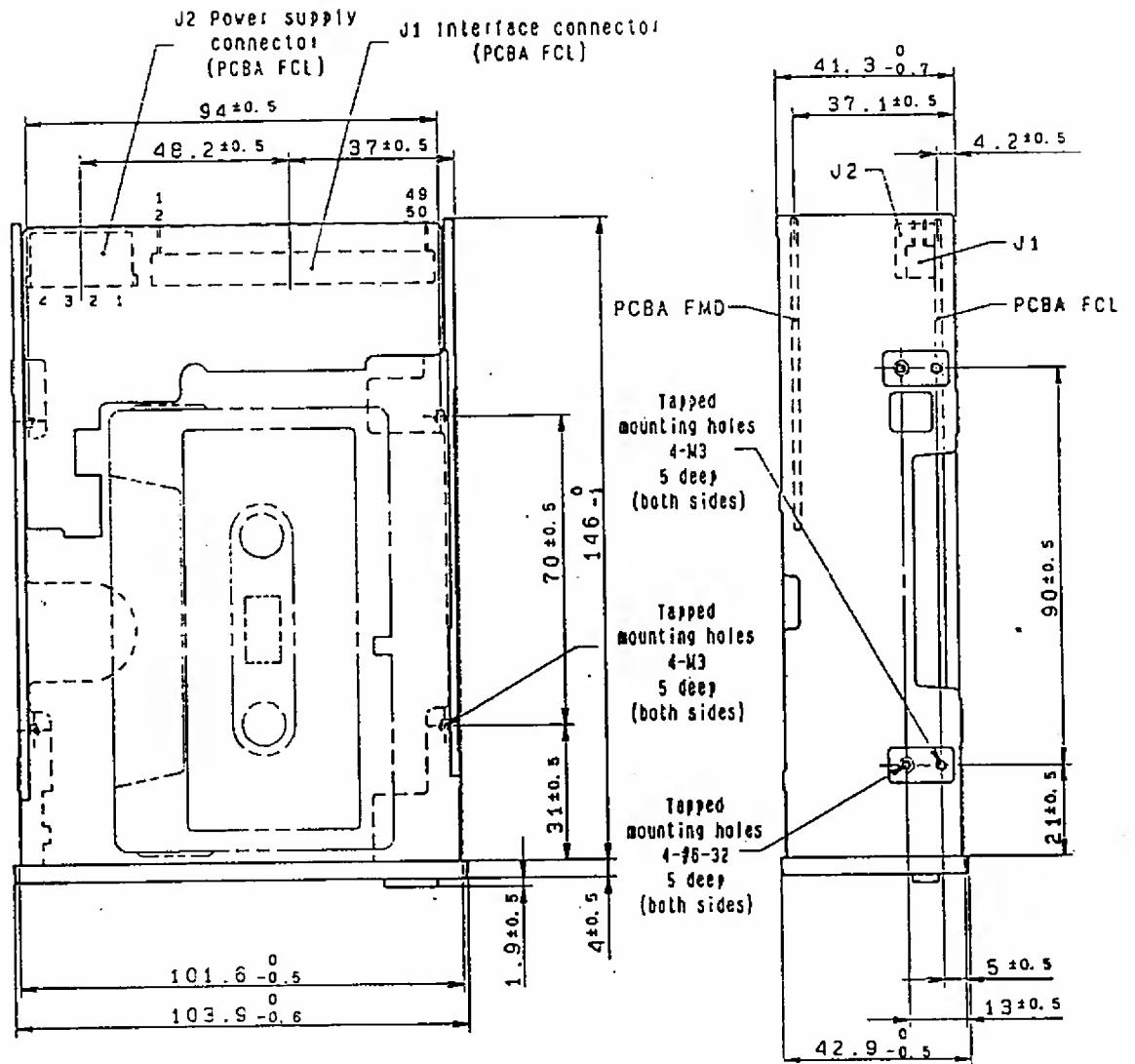
- Notes: 1. "D/CAS" in *1 is an abbreviation for "The Working Group for Data Cassette Drive Compatibility" and the XX in D/CAS-XX indicates the number of a standard approved by the group.
2. The formatted capacity in *2 is not a guaranteed value in the most hostile environment. A capacity of 600M bytes may not be achieved depending on the tape used and operating conditions. For details, refer to the instructions of the TEAC MT-2ST/F50.

(Table 101) General specifications

CONSTRUCTION

External Construction

- (1) Height : 41.3mm (1.626 in), Max.
- (2) Width : 101.6mm (4.000 in), Max.
- (3) Depth : 146.0mm (5.750 in), Max.
- (4) Weight : Approx. 660g (Approx. 1.455 lbs)
- (5) Direction of installation: As mentioned below.
 - (a) The cassette tape may be inserted horizontally from the front. However, this does not permit the indicator to be positioned on the right.
 - (b) The cassette tape may be inserted vertically from the front. However, this does not permit the indicator to be positioned at the top.
 - (c) The direction of insertion in items (a) and (b) should be within 10 degrees of the direction perpendicular to the front bezel.
- (6) Mounting method : The drive is fixed with screws through the mounting holes at the sides and bottom. Refer to Fig.101 for the positions of the mounting holes.
- (7) Color of front bezel : Refer to Table 101.
- (8) Indicator LED color : Refer to Table 101.
- (9) External view : Refer to Fig.101.



(Unit: mm)

(Fig.101) MTU External view

ENVIRONMENTAL CONDITIONS

(1) Ambient temperature

- (a) In operation : 5 ~ 45°C (41 ~ 113°F)
- (b) During storage or transportation : -25 ~ 60°C (-13 ~ 140°F)

(2) Temperature gradient

- (a) In operation : 15°C (27°F)/hour or less (non-condensing)
- (b) During storage or transportation : 30°C (54°F)/hour or less (non-condensing)

(3) Relative humidity

- (a) In operation : 20 ~ 80% (non-condensing)
Maximum wet-bulb temperature shall be 26°C (79°F)
- (b) During storage or transportation : 10 ~ 90% (non-condensing)
Maximum wet-bulb temperature shall be 45°C (113°F)

(4) Vibration

- (a) In operation : 0.5G or less (5 ~ 500Hz, sweeps at 1 oct/min.)
- (b) Non-operating : 2G or less (5 ~ 50Hz, sweeps at 1 oct/min.)

(5) Shocks

- (a) In operation : 5G or less (11msec or less)
- (b) Non-operating : 50G or less (11msec or less)

- (6) Transport conditions: The general rule level II of the appropriate package goods test method in JIS-Z0200 is satisfied, when specified packing case is used.

(7) Acoustic noise : 50dBA or less (1 meter from the front bezel),
other than during head positioning

OPERATIONAL CHARACTERISTICS

Tape Drive System Operational Characteristics

(1) Tape speed

- (a) D/CAS-103 write/read : 60ips (1,524mm/sec)
- (b) D/CAS-25 and D/CAS-85 read: 90ips (2,286mm/sec)

(2) Long-term speed variation

(LSV) : $\pm 3\%$

(3) Instantaneous speed

variation (ISV) : $\pm 4\%$

(4) Maximum rewinding time

- (a) CT-600F : Approx. 135sec
- (b) CT-600N or CT-600H : Approx. 85sec

(5) Repositioning time (CT-600F)

- (a) Write (TRACK 00) : Approx. 3.5sec
- (b) Write and read
(other than TRACK 00): Approx. 2sec

Control Characteristics

(1) Write/read data format

- (a) Write and read : In compliance with D/CAS-103 (21 tracks)
- (b) Downward read : In compliance with D/CAS-85 (17 tracks)
In compliance with D/CAS-25 (9 tracks)

(2) Average data transfer rate in streaming operation

- (a) D/CAS-103 (21 tracks): Nominal 242.3K bytes/sec

- (b) D/CAS-85 (17 tracks) : Nominal 122.5K bytes/sec
- (c) D/CAS-25 (9 tracks) : Nominal 86.3K bytes/sec

- (3) Block length on tape : 1,024 bytes (D/CAS-103)
512 bytes (D/CAS-85, D/CAS-25)

- (4) Buffer memory : ~~57,344~~ bytes

- (5) Retry count at write : Max. 15 times

- (6) Retry count at read : Max. 16 times

- (7) Timing margin check
(at write) : Center position $\pm 0.125t$ ($t = 1$ bit interval)

Interface Part

- (1) Interface : In compliance with SCSI (ANSI X3.131-1986)

- (2) Maximum data transfer rate
 - (a) Write : 560K bytes/sec
 - (b) Read : 560K bytes/sec

- (3) Block length at SCSI command : 512 bytes (D/CAS-103, D/CAS-85, D/CAS-25)

Reliability

- (1) Mean time between failures
(MTBF) : 10,000 POH or more

- (2) Mean time to repair (MTTR): 30 min or less

SCSI ID	Strap		
	S2	S1	S0
0	0	0	0
1	0	0	1
2	0	1	0
3	0	1	1
4	1	0	0
5	1	0	1
6	1	1	0
7	1	1	1

Note: (1) There are 2 strap states: 1: OPEN and 0: SHORT

(Table 113) How to set the SCSI ID