TEAC DK-5000S-0A
CD-R/DVD±R DISC ERROR RATE CHECKER/ DVD MULTI DRIVE

HARDWARE SPECIFICATION

Rev. D

16sheets in Total

8951d

TABLE OF CONTENTS

1. SCOPE

This is hardware specification of the TEAC DK-5000S-0A CD-R/DVD±R DISC ERROR RATE CHECKER/ DVD Multi Drive (hereinafter referred to as drive). As for attached the apprication specification of USB MODE, refer to "DK-5000S-0A Applecation Specification" and for the hardware specification of DVD Multi Drive Mode, refer to "DV-W5000E-76 Hardware Specification".

2. OUTLINE

The outline of this drive is given in Table 2-1.

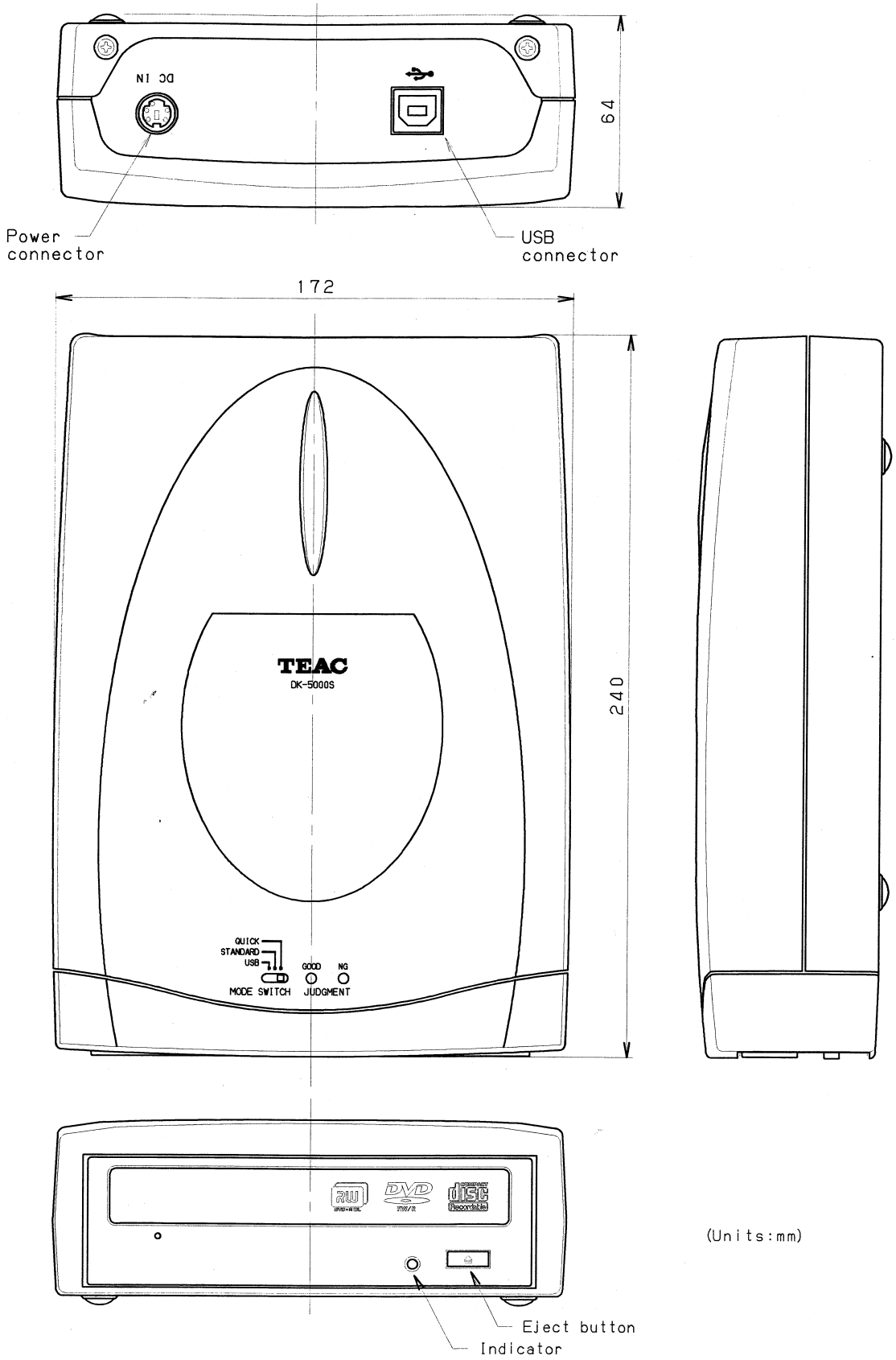
(Table 2-1) Outline of the specification/USB and Disc Checker Section

Model name		DK-5000S-0A
TEAC P/N		19800280-0A
Applicable safety standards		CE
Interface transfer rate (USBIF)		480 Mbits/sec at high speed, 12 Mbits/sec at full speed
Disc speed/Disc Checker Mode (CD: 40x CAV/ DVD: 16x CAV)		8,560min^{-1}/ 9,190min^{-1} (Approx)
Host interface		USB 2.0
Power source		+5VDC, +12VDC
Loading mechanism		Disc tray
Testing time (Stand Alone Mode,Typical)	CD	Standard Mode: 6min, Quick Mode: 1min30sec
	DVD SL	Standard Mode: 10min30sec, Quick Mode: 2min30sec
Applicable discs/ Disc Checker Mode	CD	CD-R
	DVD	DVD-R, DVD+R
Applicable format/ Disc Checker Mode	CD	CD-DA, Mode1, Mode2, Mode2 (Form1, Form2), Photo CD, Single/Multi-session, CD-i, Video-CD, CD-Extra (CD-Plus), CD-Text
	DVD	DVD-Video, DVD-R (Single/Multi-border), DVD+R (Single/Multi-session), DVD+Video
Front bezel		Black/Drive, Silver/Case
Indicator		Drive: Green, Judging Indication: Red and Green
Laser class		Class 1 laser product
RoHS directive		Complies with

3. CONSTRUCTION

3.1 External Construction

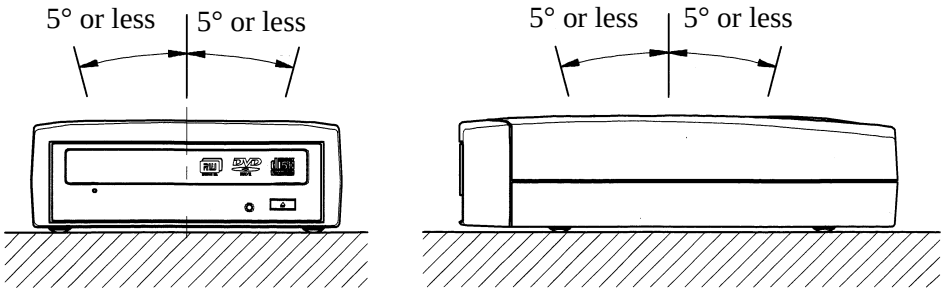
(1) Dimensions
  (a) Height : 64±1mm (Including the front bezel)
  (b) Width : 172±2mm (Including the front bezel)
  (c) Depth : 240±3mm (Including the eject button)
(2) Mass : 1,350g or less
(3) External view : Refer to Fig. 3.1-1.



(Fig. 3.1-1) External view of the drive

3.2 Installation

(1) Installation direction : Refer to Fig. 3.2-1.
(2) Tilt : Refer to Fig. 3.2-1 below.I



(Fig. 3.2-1) Tilt of the drive

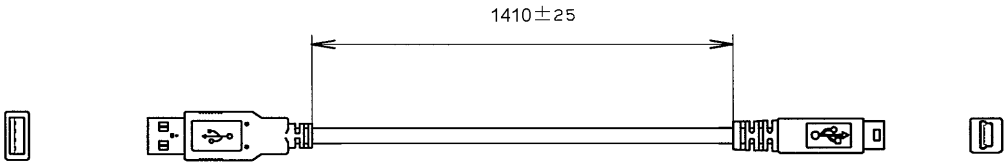
3.3 Connection Cable

3.3.1 USB cable

(1) Length : 1410mm (excluding the plug section)
(2) External view : Refer to Fig. 3.3.1-1.

(Table 3.3.1-1) USB cable pin assignnment

Pin number	Signal
1	VBUS
2	D–
3	D+
4	ID
5	GND



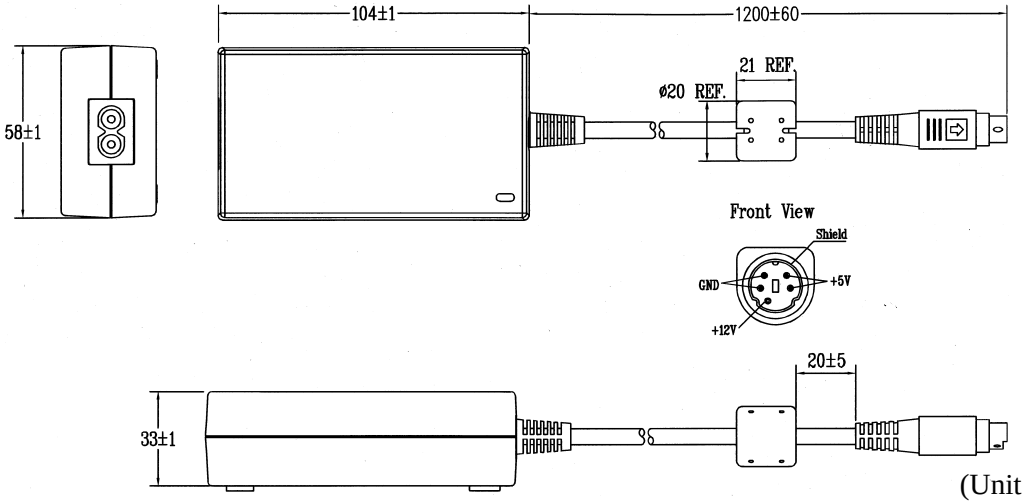
(Unit : mm)

(Fig. 3.3.1-1) External view of the USB cable

3.4 AC Adapter

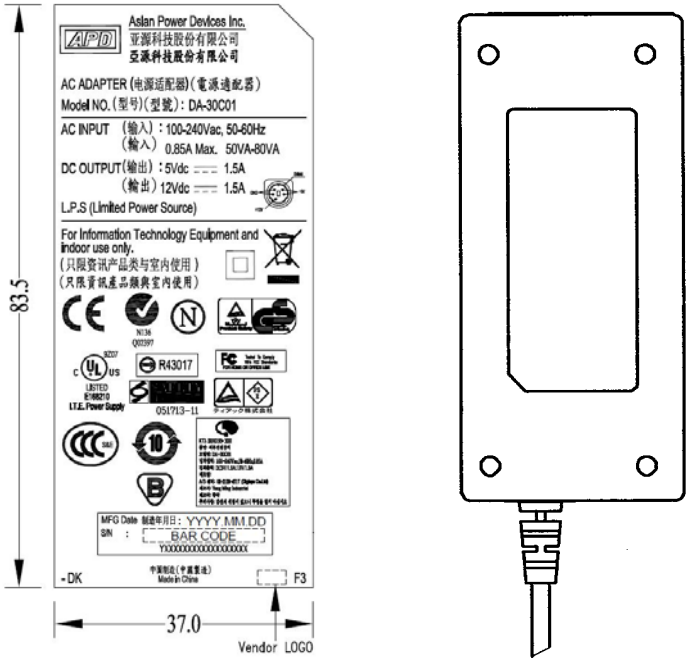
3.4.1 External construction

(1) Dimensions
  (a) Height : 33 ±1mm
  (b) Width : 58 ±1mm
  (c) Depth : 104 ±1mm (excluding cable)
  (d) Cable length : 1,200 ±30mm
(2) Mass : Approx. 240g
(3) External view : Refer to Fig. 3.4.1-1.
(4) Label : Refer to Fig. 3.4.1-2.
(5) AC cable : 1,735 ±30mm (excluding the plug section)



(Unit : mm)

(Fig. 3.4.1-1) External view



(Unit : mm)

(Fig. 3.4.1-2) Label

4. ENVIRONMENTAL CONDITIONS

The environmental conditions as specified here do not include the environmental conditions of the disc. The environmental conditions of the disc should follow the specifications of the applicable disc.

(1) Temperature and Humidity

(Table 4-1) Temperature and Humidity

Drive condition	Test items	Min.	Typ.	Max	Units.	Remarks
Operating	Temperature	+10	–	+35	°C	Within 10°C/hour deviation Within 10%/hour deviation No condensation
	Humidity	15	–	85	%RH	
	Wet Bulb Temp	–	–	28	°C	
Not operating	Temperature	-10	–	+50	°C	Within 10°C/hour deviation Within 10%/hour deviation No condensation
	Humidity	15	–	85	%RH	
	Wet Bulb Temp	–	–	29	°C	
Transportation (packaging condition)	Temperature	-20	–	+55	°C	Within 20°C/hour deviation within 20%/hour deviation No condensation
	Humidity	15	–	85	%RH	
	Wet Bulb Temp	–	–	29	°C	

5. RELIABILITY

(1) Mean time between failures (MTBF)
: 6,000POH or more (the frequency of use should be 10% at normal temperature and humidity)

(2) Mean time to repair (MTTR) : 30minutes

(3) Loading/ejecting life : 10,000 times or more

(4) Self-diagnosis of hardware

(a) When power is switched ON : Various controllers, ROM, RAM, buffer, ECC circuit, etc.

(b) When disc is inserted : Servo circuit, signal processors, etc.

6. SAFETY STANDARDS

The drive complies with the following safety standards:

(1) CE standard

7. INDICATORS AND STRAP FUNCTIONS

7.1 Indicators

7.1.1 Position

The indicators for the drive status and the switch for the drive mode are on the top cover and the indication for power is located at the lower right side of the disc tray.

7.1.2 Indicators for the drive status

The drive status is indicated with (Red and Green LED).

(Table 7.1.2-1) Indicators

Mode	Status	Green Indicator	Red Indicator
USB Mode	During reading	Light	–
	During writing	Light	–
	Tray open/close	Light	–
Disc Checker Mode	No Media	–	–
	During Measurement	Blink Alternately	Blink Alternately
	RANK_A	Light	–
	RANK_B Warning1	2times Blink	–
	RANK_C Warning2	3times Blink	–
	RANK_D Warning3	–	Light
	Protect	Light	Light

(Table 7.1.2-2) Measurement Spec.(DVD)

DVD		Value	Unit	Comment
Measurement Length		0x80	Sector	
Measurement Period		0x10	Sector	
Skip Length	STANDARD	0x000	Sector	
	QUICK	0x700	Sector	Radial Skip Length 50 max [um]
RANK_A		140	PI-det [Line/8ECC]	PI-SUM8
RANK_B		280	PI-det [Line/8ECC]	PI-SUM8
RANK_C		560	PI-det [Line/8ECC]	PI-SUM8
POF		1	PO-fail [Line/8ECC]	PI-SUM8

(Table 7.1.2-3) Measurement Spec.(CD)

CD		Value	Unit	Comment
Measurement Length		75	SubQ	
Measurement Period		1	SubQ	
Skip Length	STANDARD	0	SubQ	
	QUICK	225	SubQ	Radial Skip Length 50 max [um]
RANK_A		110	C1-det [EfmFrame/75SubQ]	
RANK_B		220	C1-det [EfmFrame/75SubQ]	
RANK_C		440	C1-det [EfmFrame/75SubQ]	
C2F		1	C2-fail [EfmFrame/75SubQ]	

7.1.3 Switch

The drive mode is changed with the switch. The switch setting is enabled after power.

(Table 7.1.3-1) Switch setting

Mode	Function
USB Mode	Drive works as DVD Multi Drive and Disc checker with USB I/F
STANDARD Mode	Drive works as standard speed Disc Checker
QUICK Mode	Drive works as high speed Disc Checker

8. OPERATING PERFORMANCE

(TEAC special application program is necessary for all the following measurements.)

8.1 Accuracy of Measurement

(Testing temperature which is measured with the sensor of OPU in the drive should be between 40°C and 50°C.)

8.1.1 Jitter

Jitter for CD: Within ± 1dB against the value of the Test Disc.(Point 1.3)
Jitter for DVD: Within ± 1dB against the value of the Test Disc.(Point 1.4)
(Jitter should be measured with MCD-5003, MDVD-5003.)

8.1.2 SYM/ASYM

Symmetry for CD: Within ± 1dB against the value of the Test Disc (Point 1,3).
Asymmetry for DVD: Within ± 1dB against the value of the Test Disc (Point 1,4).
(SYM/ASYM should be measured with MCD-2900, MDVD-2121.)

8.1.3 Error Rate

BLER for CD: Within ± 6dB against the value of the Test Disc (Point 2).
PI sum8 for DVD: Within ± 6dB against the value of the Test Disc (Point 3).
(Error Rate should be measured with MCD-5003, MDVD-5003.)

8.2 Testing Time

8.2.1 Stand Alone Mode

(Testing time should be measured with MCD-5001, MDVD-5001.)

	Mode	Time (Typical)
CD-R	Quick	1min 30sec
	Standard	6min
DVD-R	Quick	2min 30sec
	Standard	10min 30sec

8.2.2 PC Mode

(Testing time should be measured with MCD-5001, MDVD-5001.)

	Mode	Time (Typical)
CD-R	Quick	2min 40sec
	Standard	7min 10sec
DVD-R	Quick	3min 30sec
	Standard	11min 50sec

9. Others

9.1 Protection Mode and Self Diagnostic Function

9.1.1 Number of times of Measurement to become Protection mode

2000 times (Total of CD and DVD)

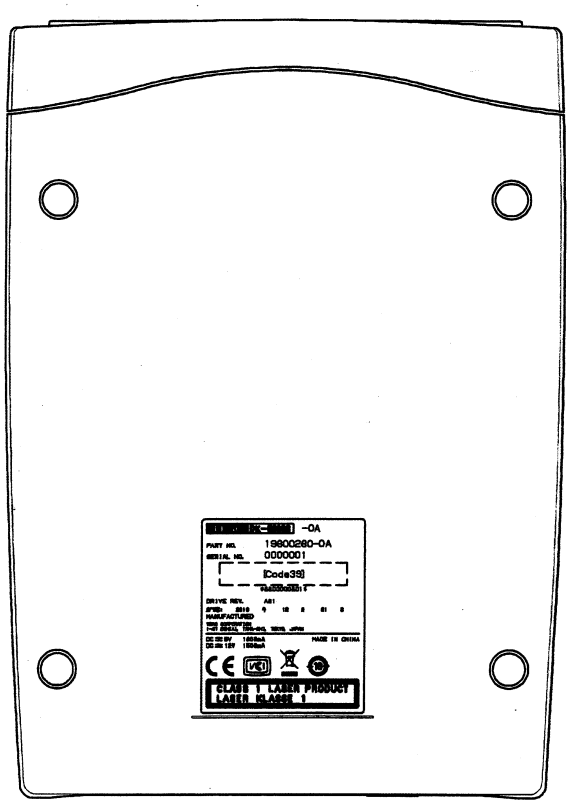
9.1.2 Threshold value for releasing from Protection mode

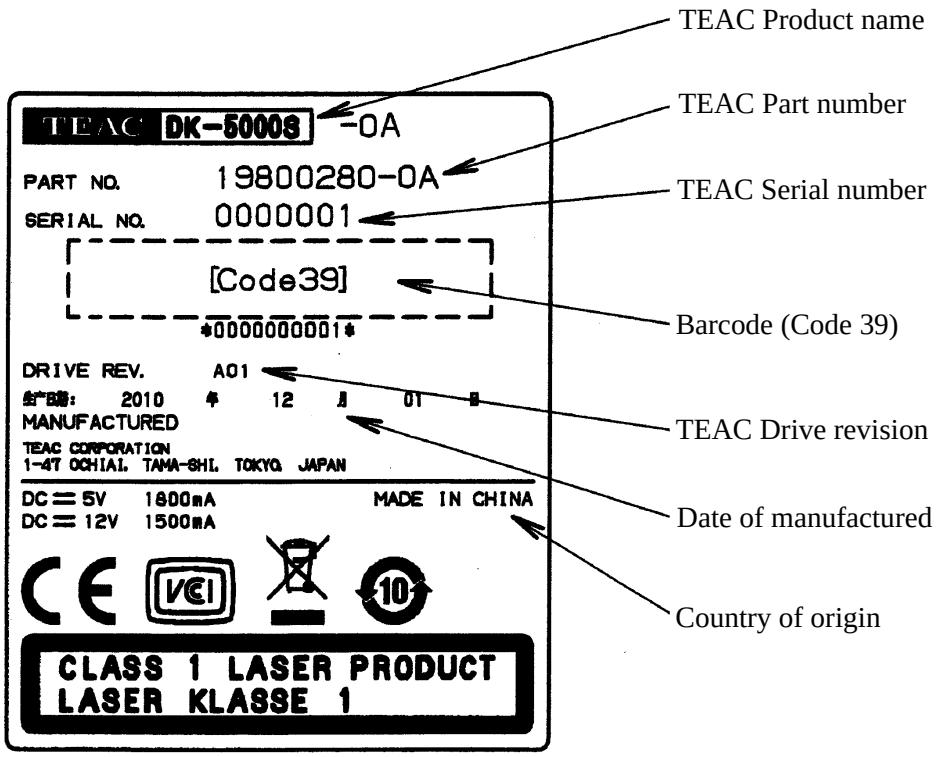
(Self Diagnostic Function should be performed with TYG02)

(Table 9.1.2-1) Threshold value

DVD	PI sum8 ≤	80
	Jitter ≤	9%

10. NAMEPLATE INDICATION

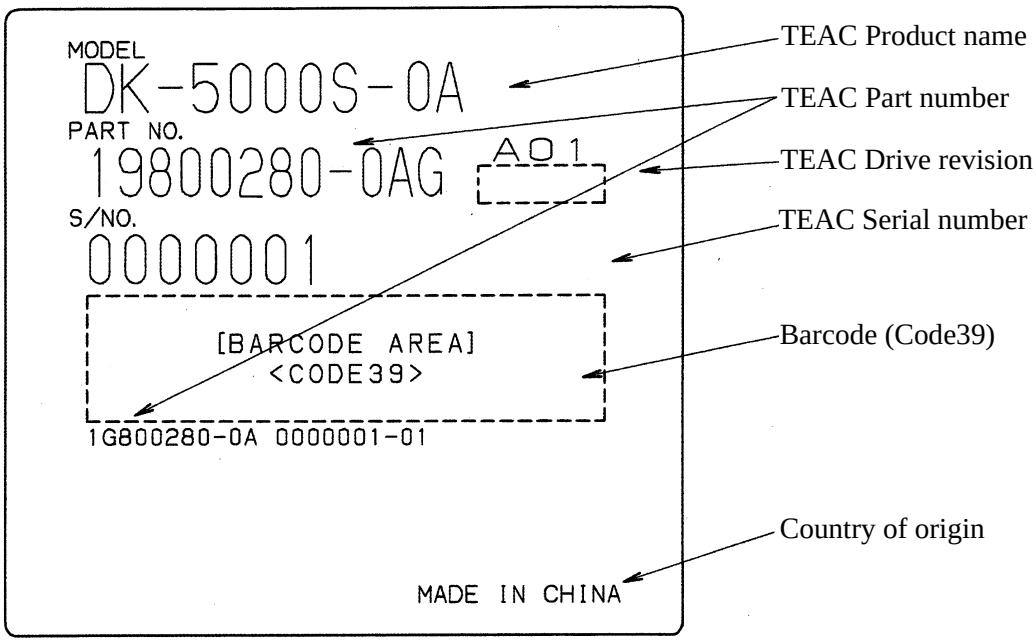




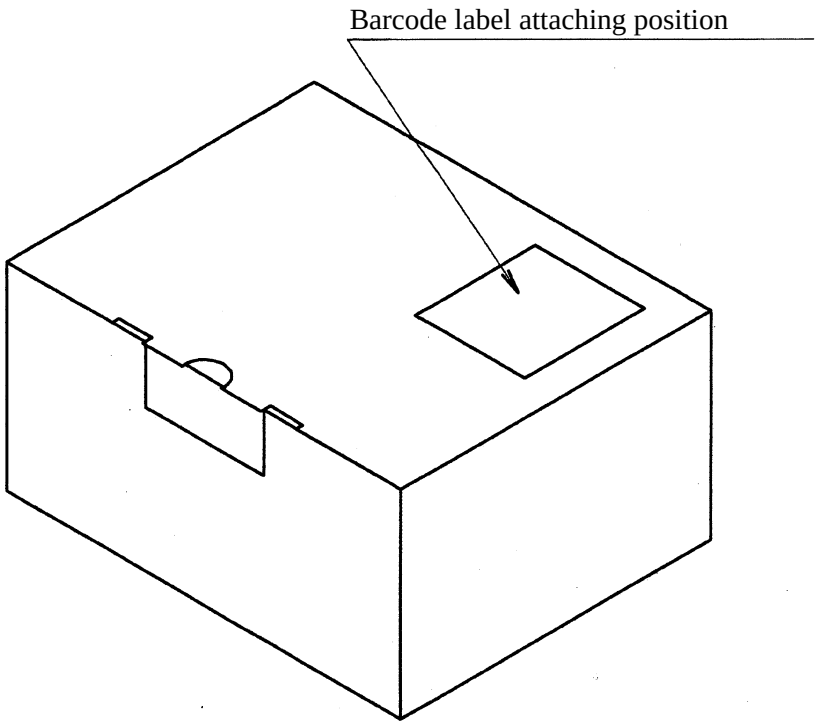
(Fig. 10-1) Nameplate indication contents

11. PACKAGE

11.1 Attaching position of label

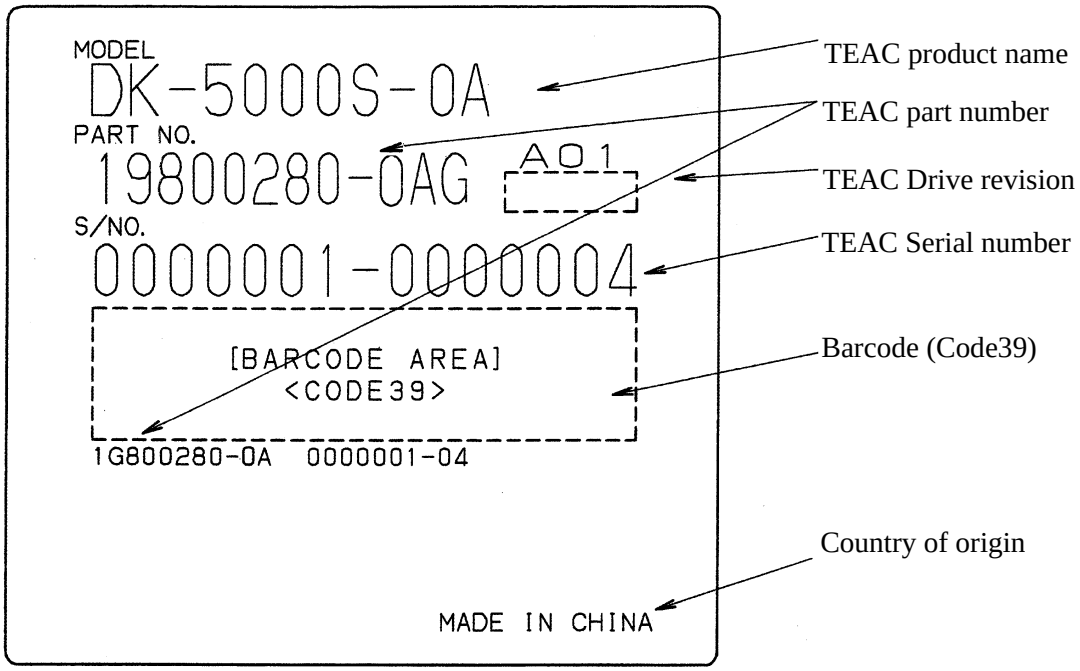


(Fig. 11.1-1) Barcode label indication contents

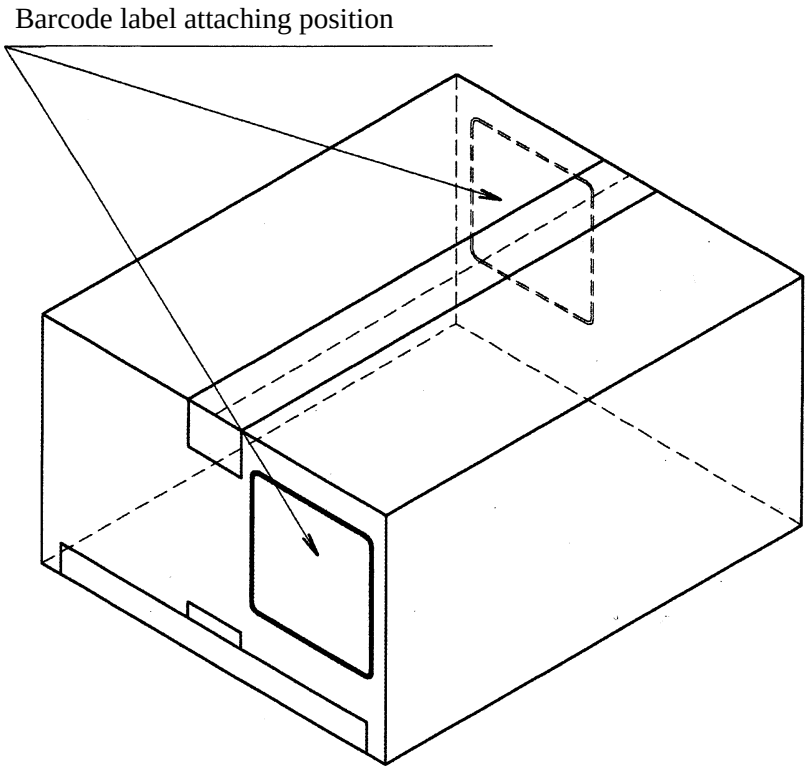


(Fig. 11.1-2) Attaching position of barcode label

11.2 Attaching position of Barcode label



(Fig. 11.2-1) Barcode label indication contents



(Fig. 11.2-2) Attaching position of Barcode labels