

CrushBox

Physical destruction machine for data storage media

Automatic hard drive destroyer for professional use.

DB-50Pro-E

Instruction Manual

Thank you for your purchase of the DB-50Pro-E Crush Box. This manual describes the tool's features, proper uses, and safety precautions. It also includes a useful "troubleshooting" chart to assist in easily resolving potential problems. All who use the DB-50Pro-E, or intend to use the machine should familiarize themselves with this manual's contents. The manual should be readily accessible to users at all times.

Nittoh Zohki co.,LTD

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1. Safety Information

Product overview: This machine makes hard disks unreadable, and makes floppy disks, CDs, DVDs, MOs, and Zip disks unusable. Hydraulic pressure is used to accomplish this process.

This instruction manual utilizes three symbols to ensure proper use age of this product and to prevent harm to you and others or damage to property. The symbols and their meanings are as follows. Be sure to read and understand them completely, before reading the remaining sections of this manual.



DANGER

Indicates the potential for danger and the possibility of death or severe injury if the precaution is ignored and the machine is used improperly.

Precautions on installation



WARNING

- Organize the work area.
Eliminate anything that may be harmful or hazardous to the operators, including high temperature, flame, movable objects, and sharp or corrosive objects, from the areas where this product is used.
- The operating temperature range for this product is **from 10°C to 40°C**.
If the product is used in other conditions, the performance may suffer.



CAUTION

- Avoid exposure to rain or humidity. Preferably use in a dust-free environment.
- Avoid prolonged exposure to direct sunlight.

Prolonged exposure to high temperatures may cause problems with processing and may damage the machine.



WARNING

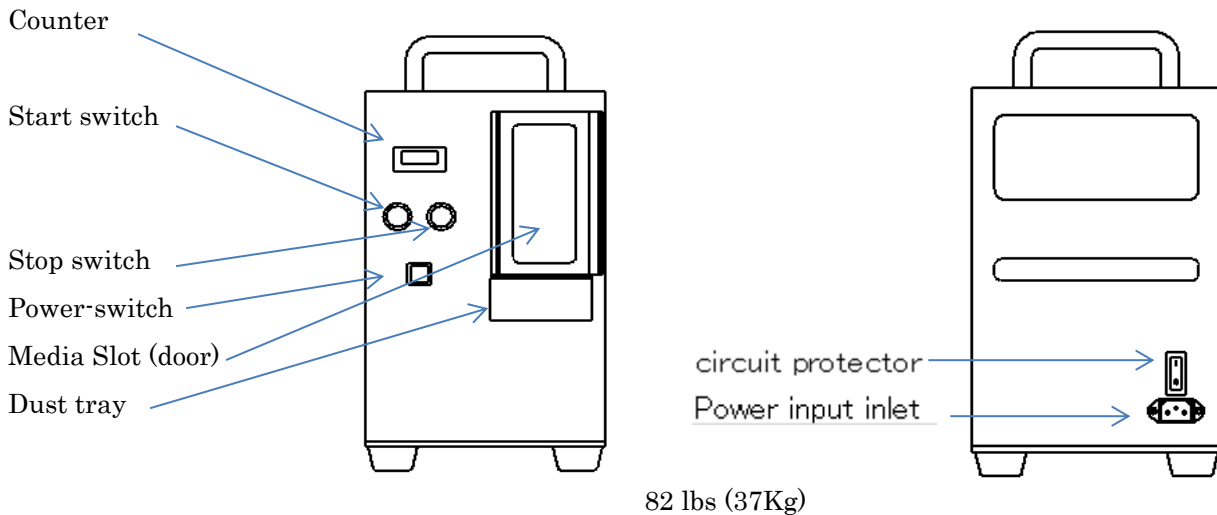
- Be careful to avoid electric shock.
Do not connect or disconnect the power plug with wet hands.
Be sure to connect the power plug to the ground during use.



CAUTION

- The power supply should be **200-240 VAC single phase**.
Improper voltage may cause the unit to **burn out**.
Continuous low voltage may cause burn out or dangerous heat generation.
- When disconnecting the power plug from an outlet, be sure to grasp the plug for removal from the receptacle. Pulling the cord can cause breakage or short circuits.
- When extending the cord, use an extension with a thickness of 1.25 mm² or more and length of not more than 10 m in order to avoid voltage drops.
- **When handling hard disks or removing debris from the destruction chamber, always wear gloves to prevent injury due to the sharp prongs or other sharp objects.**

2. Part Names



3. Before Use

3-1) Checking the product

Check for damage or oil leakage during shipment.

Check the accessories.

Accessories _____ 1 each

Dust tray, Adapter (for 2.5-inch HDD), Adapter (for CD, DVD, DVD caddy, 3.5-inch floppy disk, Zip disk, and 3.5- and 5-inch MO disk), Cell-phone adapter, Special brush, Power cord, Power plug adapter

3-2) Checking the power supply



WARNING

The power supply should be 200-240 VAC single phase. (3 wire) Be sure to connect the ground during use.

3-3) Media and maximum numbers that can be processed

3.5-inch hard disk (thickness of 1.6 inches = 41 mm or less)	_____	1 unit	} *
2.5-inch hard disk	_____	1 unit	
5-inch MO caddy (cartridge)	_____	1 piece	
DVD caddy (cartridge)	_____	up to 2 pieces	
Bare CD/DVD	_____	up to 5 pieces	
5-inch MO disk	_____	up to 2 pieces	
3.5-inch MO disk	_____	up to 2 pieces	
3.5-inch floppy disk	_____	up to 5 pieces	
Zip disk	_____	up to 2 pieces	
Cell-phone	_____	up to 2 units	
1-inch hard disk (optional)	_____	up to 4 units	
1.8-inch hard disk (optional)	_____	up to 2 units	



Warning

Never process objects that are not listed above. In addition, never process media listed above in combination with other types.

* If the media sticks on the destruction shafts, reduce the number of media to be processed.

The number of media that can be processed may change due to the media's spec.

3-4) Precautions for continuous operation and low-temperature circumstances



Caution

When destroying a large quantity of media, do not continuously process more than 300 pieces in a session, as this will raise the ambient temperature. If you continue processing more, the temperature fault lamp may turn on. After continuous processing of 300 pieces, do not turn off the machine. Instead suspend the work for about one hour and let the cooling fan operate. When the temperature fault lamp turns on, suspend the work for about two hours with the machine on. After that, turn off the machine once to reset it. Then turn on the machine again to resume work. When the temperature is low (10°C and below), the pump may not operate normally. In this case, repeat the following sequence about ten times; push the start button, ten seconds later, push the emergency stop button. This operation warms up the machine.

4. Preparation and operation procedures

The direction and position of insertion are different depending on the types of Medias.



Warning



Caution

The Crush Box uses circuit protector (CP) for the over current protection. When you want to turn on the machine, please confirm that CP condition is "ON". In the "OFF" condition, Crush Box isn't turned on.

The starting point return

(Operation to return the destruction pins)

During the starting point return, the start-up lamp switch blinks.

If you press an emergency stop switch or you open a door while this machine was working, the destruction pin stays in the out position. In such case push the start-up switch and return to the starting point.

If you cut the electric power switch, the power-cord comes off, or electric supply was cut off while this machine was working, the destruction pin stays in the out position. In such cases push the a start-up switch for 1 cycle.

(When the power switch is only turned off once, the starting point return operation will not work)

Cooling Fan

While machine is running for 1-cycle or after operational procedures, the cooling fan cools the hydraulic power pack for about 10 minutes and stops after that. When the abnormal temperature lamp comes on, irrespective of the operation, the cooling fan will be in the on condition. (The fan will continue to run)

However, when the cooling fan is in the on condition, and the temperature falls, the light and fan will turn off when the abnormal temperature lamp lights up once.

※ When you turn the key switch off, the cooling fan also stops.

There is no problem if the cooling fan is turning even after work has ended and the switch is turned off.

There is no problem if the switch is turned off and the abnormal temperature lamp is on.
Under these conditions it will take time to return to normal operating conditions.

Filter

If dust and so on, adheres to the filter inside the machine, use a vacuum cleaner to clean the filter, or remove and blow the dust in the filter into the air.

4-1) Preparation and operation procedures

- ① Open the door and **remove any accessories shipped with the unit**

Operation without this action may result in **damage to the unit**.

- ② Mount the dust tray on the predetermined position on the slot bottom using magnets.
- ③ Connect the power cord to the back of the body and insert the power plug into an outlet.
- ④ Turn the key switch to the ON position.
- ⑤ Turn on the main switch. (The main switch lamp turns on.)

After turning on the main switch, the start lamp (green light) flashes five times. The machine is now ready for use.

Note: Before the flashing light has stopped, the start switch will not operate the machine.

- ⑥ Open the slot door. Insert the media to be processed into the destruction chamber **until it touches the back of the unit**.

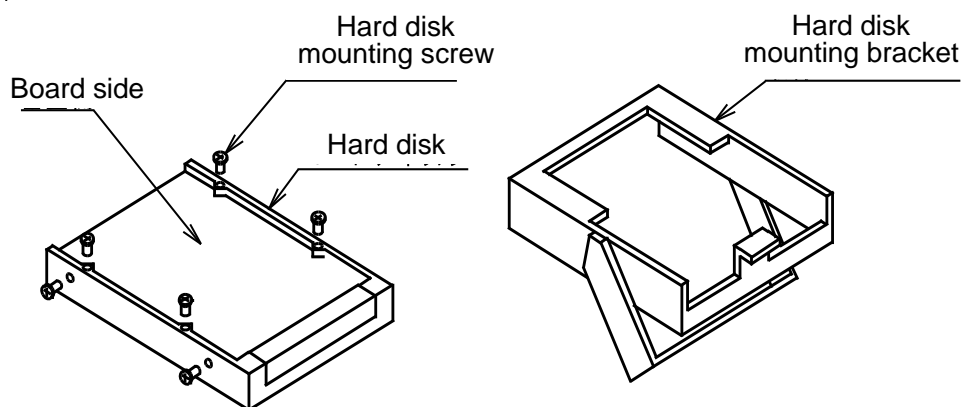
3.5inchi HDD (Thickness of 1.6inches (=4.1mm) or less)



Warning

Be sure to remove any and all screws and brackets used to secure the hard disk before processing.

Fig.1 Hard disk mounting screws and bracket



IMPORTANT: Remove all screws and brackets used to mount the hard disk. If they are left attached, the hard disk may be caught by the four destruction pins and the drive cannot be removed from the unit. (Thus creating a service call)

- For a 3.5-inch hard disk (maximum thickness of 41 mm or less), Fig. 1 on page 5

For a 3.5-inch hard disk, face the connector terminal side (disk side) frontwards and the board to the right of the machine and insert it until it touches the back of the unit. The direction and position of insertion are different depending on the types of media and drives to be destroyed. When you do not

know how to position the disk drive, insert it all the way to the back of the unit. If the destruction position is improper, the machine may be damaged. Pay careful attention to the direction and position of what is inserted and follow this guide. Please call your distributor with questions.

Confirmation of ATA S-ATA and SCSI connector 3.5-inch HDD direction of insertion

※You can confirm the kind of the HDD by checking its connector.

Please confirm the position of the connector first.

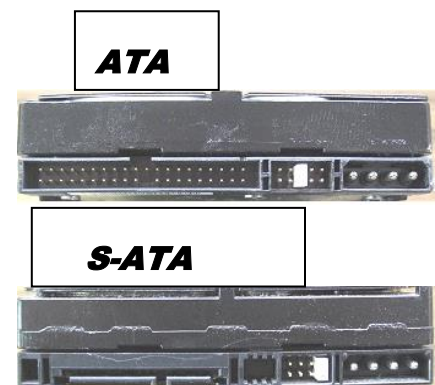
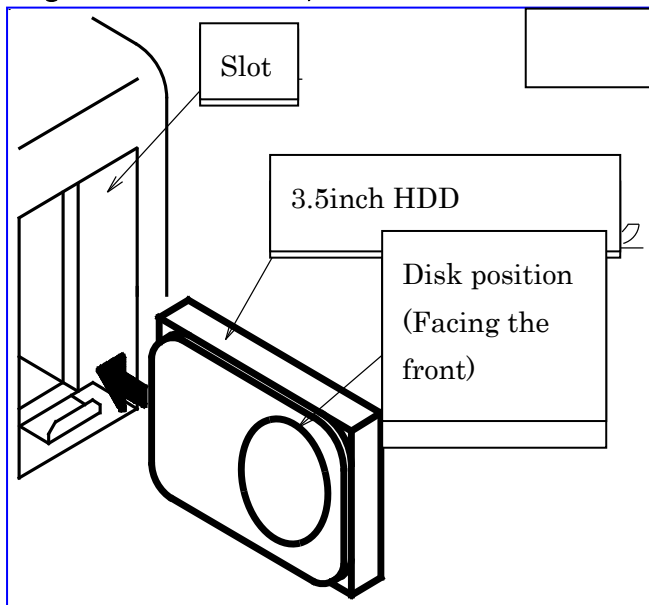
if you cannot confirm the kind of the HDD, please contact us by e-mail.

(crushbox@nittoh.co.jp)

● When the connector is ATA or S-ATA

IMPORTANT: For hard disk direction, face the disk part facing the front and insert it to the end. If it does not reach the end, the destruction pins may be damaged.

Fig.2 In case of ATA, S-ATA (the HDD for the general PC)

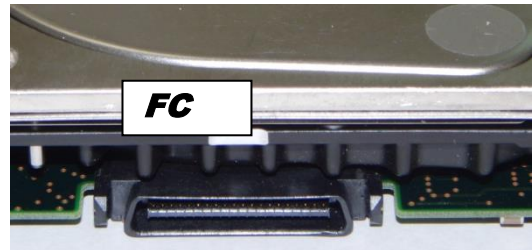
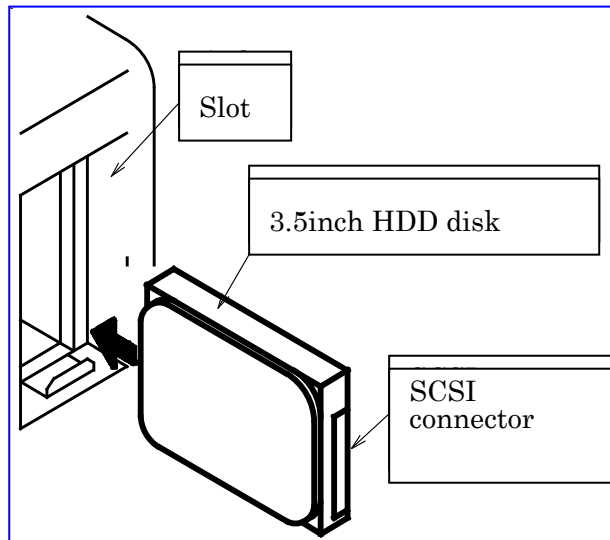


When you do not know the disk position, it sometimes helps to peel off the seal on the surface. Also, it sometimes helps to find the motor position on the back (the side with the circuit board).

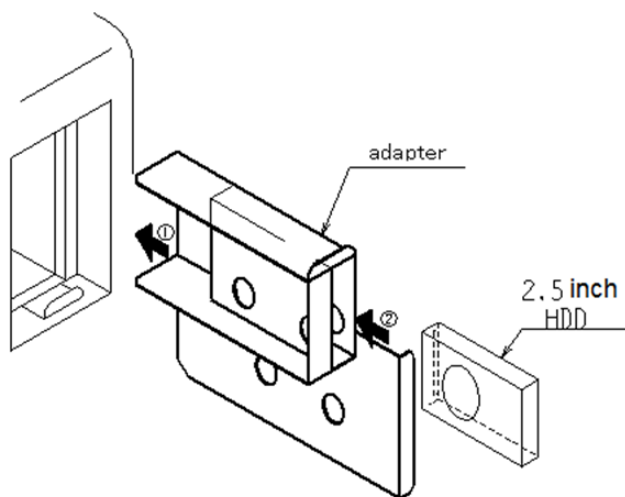
● When the connector is SCSI or FC

IMPORTANT: For the hard disk position, face the SCSI or FC connector terminal side (disk side) forward and the PC board on the right side and insert it until it touches the back of the unit. The direction and position of insertion are different depending on the type of drive being destroyed.

Fig.3 For SCSI, FC (HDD used for Server/Storage PC)



● When destroying 2.5 inch HDD
Fig.4



- (1) First, insert the adapter (for 2.5-inch HDD) all the way **to the back end** of the destruction chamber **pay close attention to the direction.**
- (2) Insert a HDD on the adapter **to the end with the circuit board to the right.**



Caution

Insert a 2.5-inch hard disk along the right wall of the destruction chamber.

The processing method for when the disks are special and / or there is a difference in the destruction hole placement.

● **For hard disks whose disk position is approximately in the center of the unit**

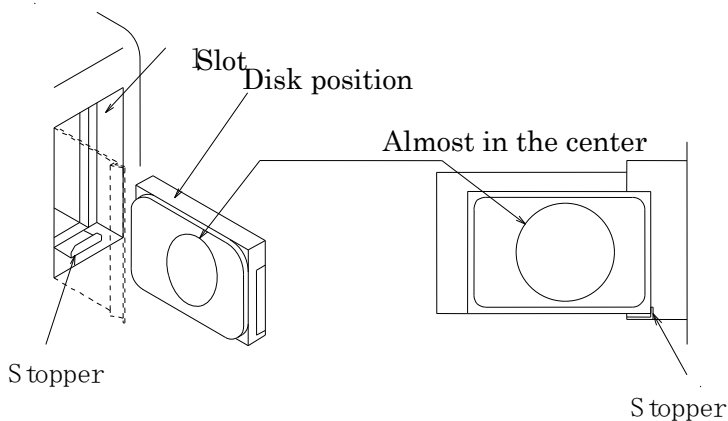
For hard disks whose disk position is approximately in the center of the body as shown in Fig. 5, **insert the drive all the way to the end of the unit and then pull it until it touches the front stopper** as shown in the figure before you process it. Though this type of hard disk seems to have suffered only small press-deformation (2 to 3 mm of press-deformation holes, while that of normal hard disks is 5 to 10 mm), **the internal disks are completely deformed and un-usable.**



Caution

Hard disk drives manufactured by Maxtor are categorized as ones whose disk position is in approximately the center. **All hard disks, except the ones whose disk position is clearly in approximately the center, should be inserted all the way to the end of the chamber for the destruction process. If you process hard disks whose disk position is approximately in the center then align them to touch the stoppers** as shown in the figure below **when they are destroyed, the destruction shafts may be broken.** Pay careful attention during the process.

Fig 5

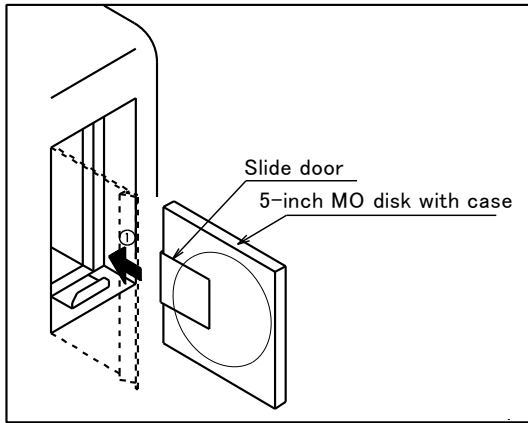


When you cannot determine the kind of HDD you have, please contact us by e-mail. (crushbox@nittoh.co.jp).

- For 5 inch M/O caddy (cartridge)

Insert it all the way **to the end with the slide door facing the back.**

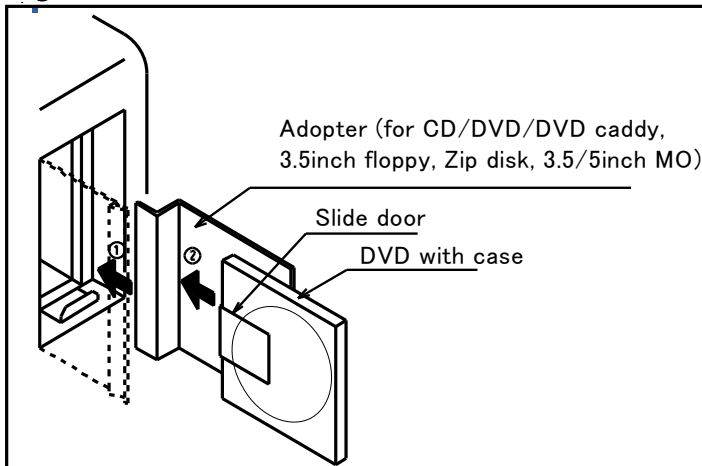
Fig.6



- For DVD caddy (cartridge)

- (1) First, insert the adapter (for CD, DVD, DVD caddy, 3.5-inch floppy disk, Zip disk, 3.5- and 5-inch MO disk) **into the end** of the destruction chamber **paying attention to the direction.**
- (2) Insert the media **all the way to the end with the slide door facing the back and the reading side to the right.**

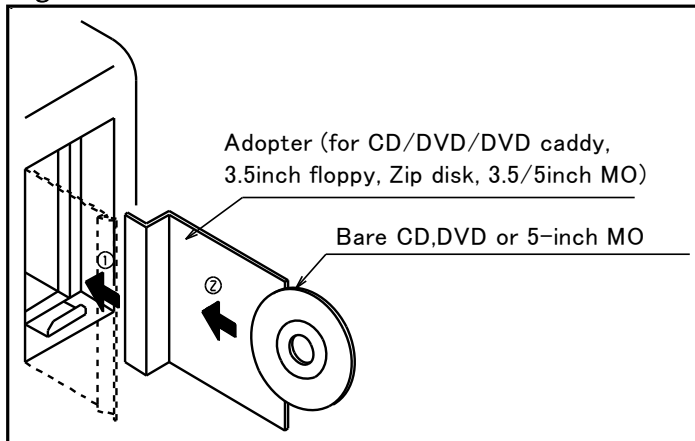
Fig 7



- **For bare CD, DVD or 5-inch MO disk**

- (1) First, insert the adapter (for CD, DVD, DVD caddy, 3.5-inch floppy disk, Zip disk, 3.5- and 5-inch MO disk) **to the end** of the destruction chamber **paying attention to the direction**.
- (2) Insert CDs, DVDs or 5-inch MO disks **to the end with the reading side to the right**.

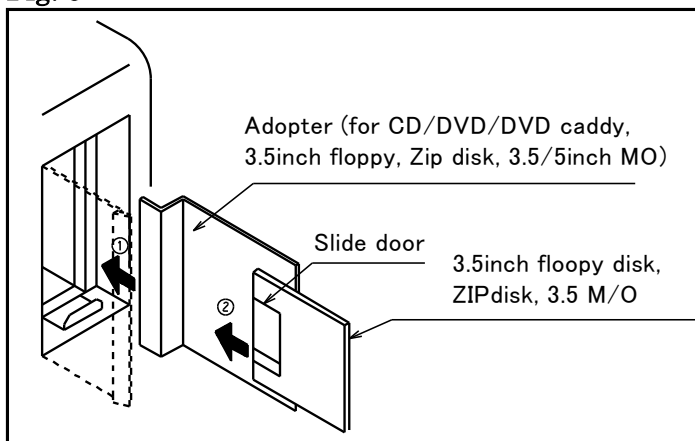
Fig 8



- **For 3.5 inch floppy disks or Diskettes, Zip disk or 3.5inch MO disk 3.5**

- (1) First, insert the adapter (for CD, DVD, DVD caddy, 3.5-inch floppy disk, Zip disk, 3.5- and 5-inch MO disk) **to the end** of the destruction chamber **paying attention to the direction**.
- (2) Insert floppy disks, Zip disks or 3.5-inch MO disks **to the end**.

Fig. 9



- **For cell-phones**

- (1) First, insert the cell-phone adapter (for mobile phones) **all the way to the back end** of the destruction chamber. Refer to **Fig. 10**.
- (2) Insert cell-phones **along the surface** of the destruction chamber. Refer to **Fig. 11**
- (3) Non-flip type cell-phones are particularly thin and tend to fall over in the destruction chamber. Place them diagonally as shown in **Fig.111** to make it difficult for them to fall over.
- (4) If the cell-phone is too thick or too wide to insert into the lower housing of the cell-phone adapter, put it into the upper.

Fig 10 Cell-phone

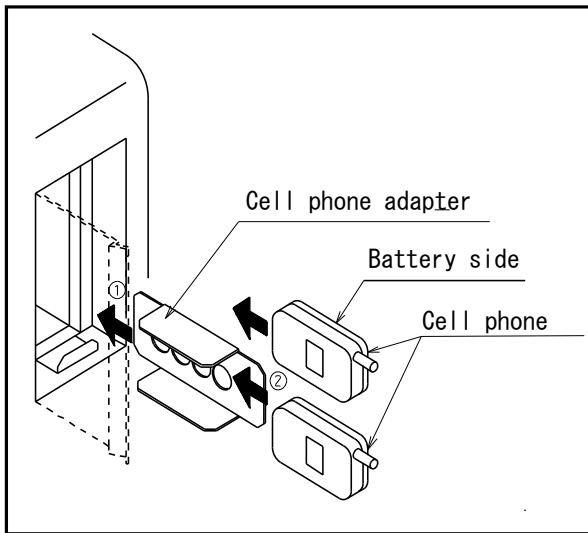
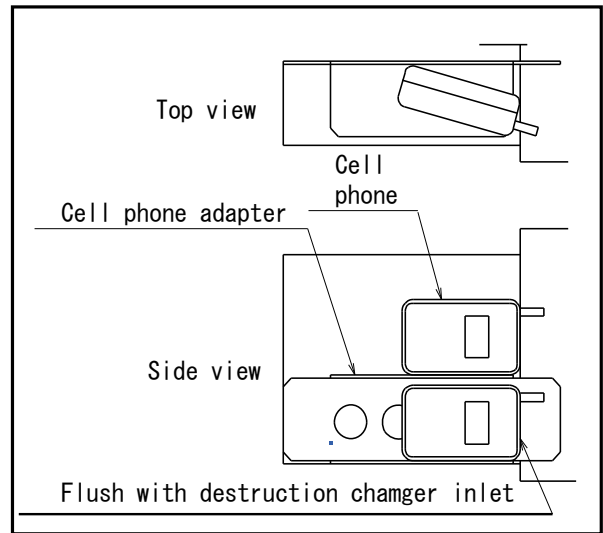


Fig 11 How to insert cell phones



Caution

Be sure to remove accessories such as straps, battery, and memory card before destroying the phone.



Warning

Never put undesigned objects into the destruction chamber. Doing so may damage the machine.



Caution

According to the type of media to be destroyed, use the appropriate adapter in the right way.

Starting the destruction process

※Before beginning the destruction process, confirm the kind of media, the direction of insertion and the adapter to use before starting.

Close the door and push the start switch. **Operating time is about ten seconds.** (The start switch is lit during operation.)



Caution

If you turn off the main switch or pull out the power cord during operation, the machine stops. (In some cases, the media cannot be removed because the machine stops with the destruction shafts protruding.) In this case, turn on the main switch again and then push the start switch to operate.



Caution

The machine does not operate if the slot door is open. In addition, if you open the door while the start lamp is illuminated, the destruction shafts return to the home position for your safety. Be sure to wait for the

lamp to turn off before opening the door and removing the media. When the destruction pin is moving it pushes a start-up switch, returning to the starting point and resetting the destruction pins.

During starting point return operations, the start-up lamp blinks.

After the work is complete, open the door and remove the processed media.

If there is debris such as electronic components dropped from boards in the destruction chamber, clean it using the accessory brush supplied with the unit.

When you want to stop the operation, push the emergency stop switch on the top surface.



Warning

After the work is finished, disconnect the power plug for safety.

4-3) For 3.5 inch HDD (with SCSI connector) which is used for servers
(Important)

The HDD for servers which have a SCSI connector appears to be 3.5 inches but the Platter's size is 2.5 inches (see the following figure).

HITACHI Ultrastar

Outward appearance: 3.5 inch

Platter: 2.5 inch

RPM: 15,000rpm

Interface: Ultra SCSI, FC, SAS



Platter 2.5"

Appearance 3.5"

Seagate Cheetah® 15K.7

RPM: 15,000rpm

Interface: SAS, FC



Platter 2.5"

Appearance 3.5"



Caution

The destruction shaft sometimes breaks off in the (example) HDD when processing with this product. The direction of insertion depends on the kind of the hard disk you are destroying.

The way to discern the direction of insertion by the kind of HDD

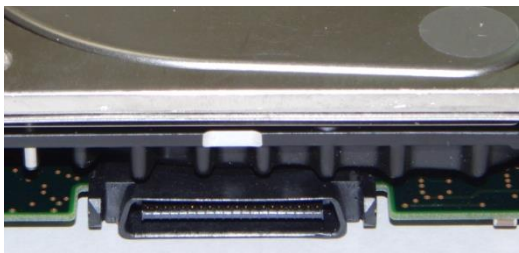
Please confirm the connector first.

※ You can judge the kind of the HDD by checking its connector.

★*SCSI* Server/Storage HDD



★*FC*



★*ATA* General PC HDD



★*S-ATA*



**When you cannot judge the kind of the HDD, please contact us by e-mail.
(crushbox@nittoh.co.jp)**

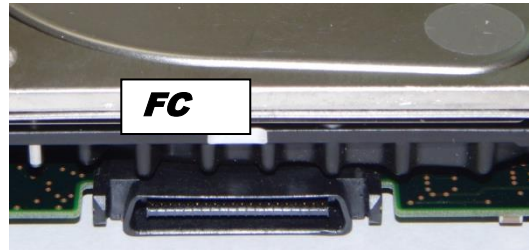
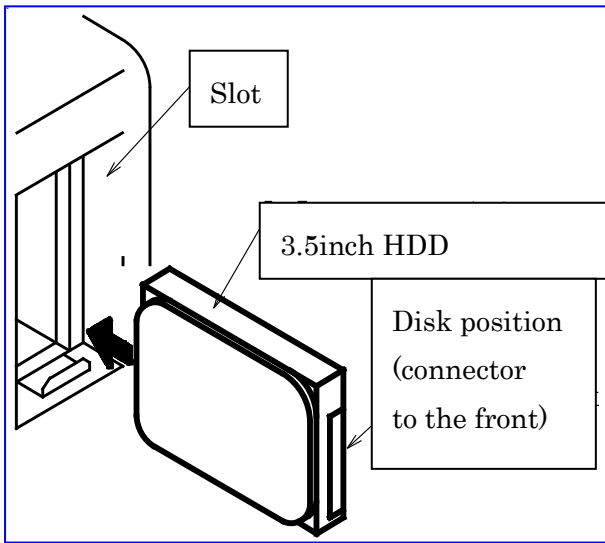
The direction of insertion by the kind of HDD

When you do not know the disk position, it sometimes helps to peel off the seal on the surface. Also, by looking at the motor position on the back (the side of the circuit board)

Direction of insertion

When the connector is SCSI or FC

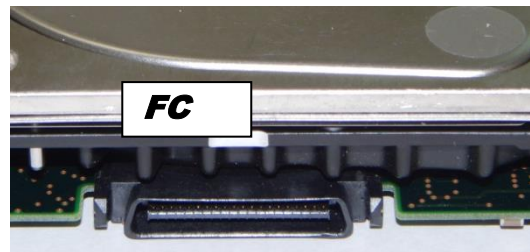
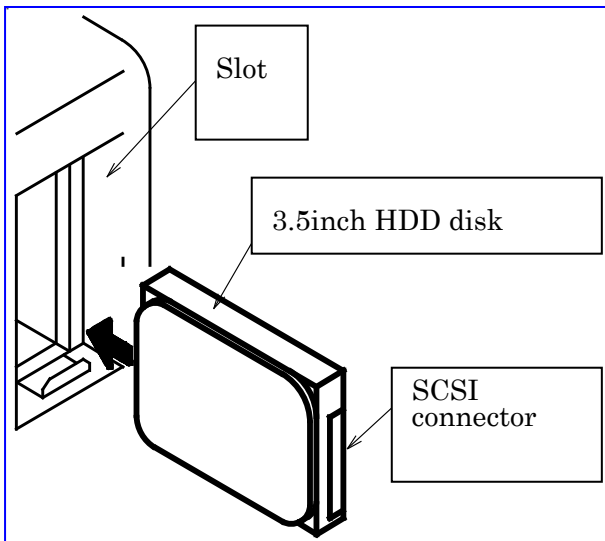
For the hard disk direction, face the SCSI or FC connector terminal side (disk side) Forward and the circuit board to the right and insert it until it touches the back end



Direction of insertion

When the connector is ATA or S-ATA

For this hard disk type, face the disk part to the front and insert it to the end.



Caution

Be sure to remove all screws and brackets used to secure the hard disk before processing. If they are left attached, the hard disk may be caught by the four destruction shafts and it cannot be removed.

When you cannot judge the type of the HDD, please contact us by e-mail. (crushbox@nittoh.co.jp)

4-4) How to use the optional adapters for 1- and 1.8-inch HDDs

※You must separately purchase the adapters for 1- and 1.8-inch HDDs

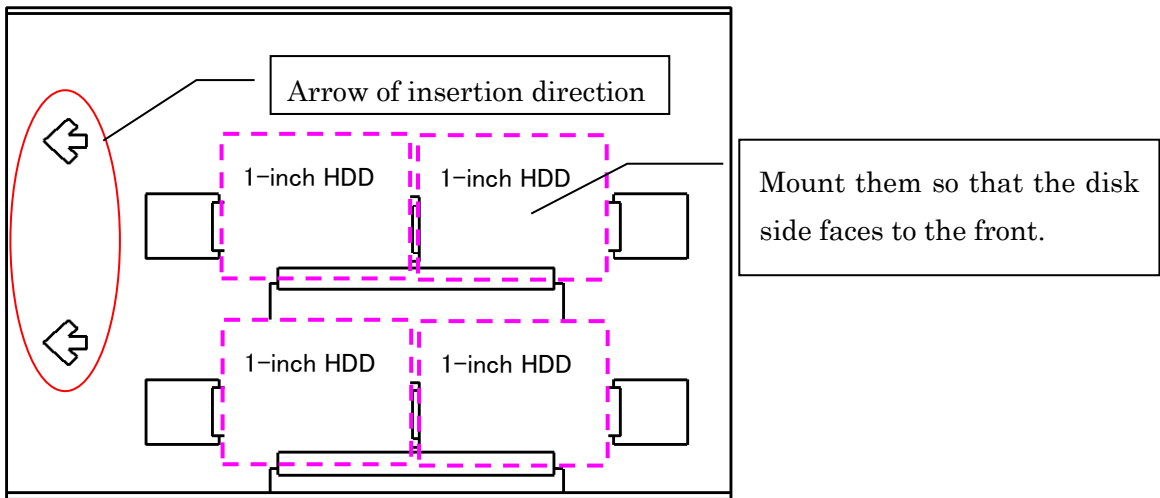
OPTION

For 1-inch HDD

Mount 1-inch HDDs on the 1-inch special adapter.

Up to four HDDs can be processed.

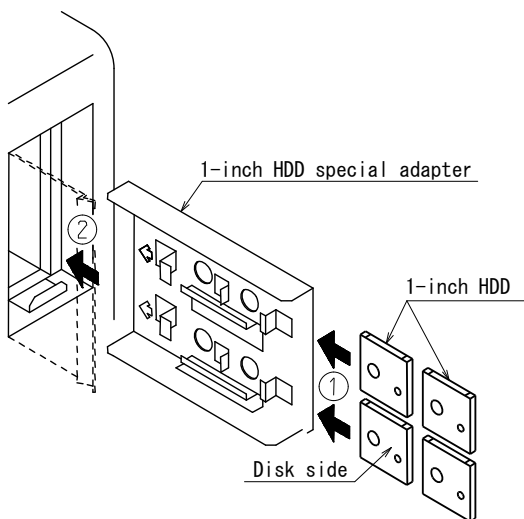
(It is possible to mount less than four. In this case, whichever arrangement is available.)



Caution

Mount the drive so that the disk side faces the front. It isn't possible to destroy a disk if a mistake is made in the direction of insertion.

Mount them so that the disk side faces towards the front.



- ① Mount 1-inch HDDs to be destroyed on the 1-inch special adapter.
- ② Insert the 1-inch special adapter into the media slot on the CrushBox in the direction of the arrow.
- ③ When you set the adapter, be sure that adapter is not on the stopper of the insertion slot.



Caution

When inserting the 1-inch special adapter into the media slot on the Crush Box, be careful not to mistake the insertion direction. The **Wrong** direction may result in breaking of the adapter.

For 1.8-inch HDD

Important for the 1.8 inch HDD, the size depends on the difference in the capacity (the number of disks)and the connector shape. Be careful because the details of work depend on the size of the HDD.
1.8HDD figure 1, 1.8HDD figure 2, 1.8HDD figure 1

1.8-inch HDD figure 1

Connector: ZIF

Size (W×D×H): 54×70×7.0 mm

No. of the disk inside: 1

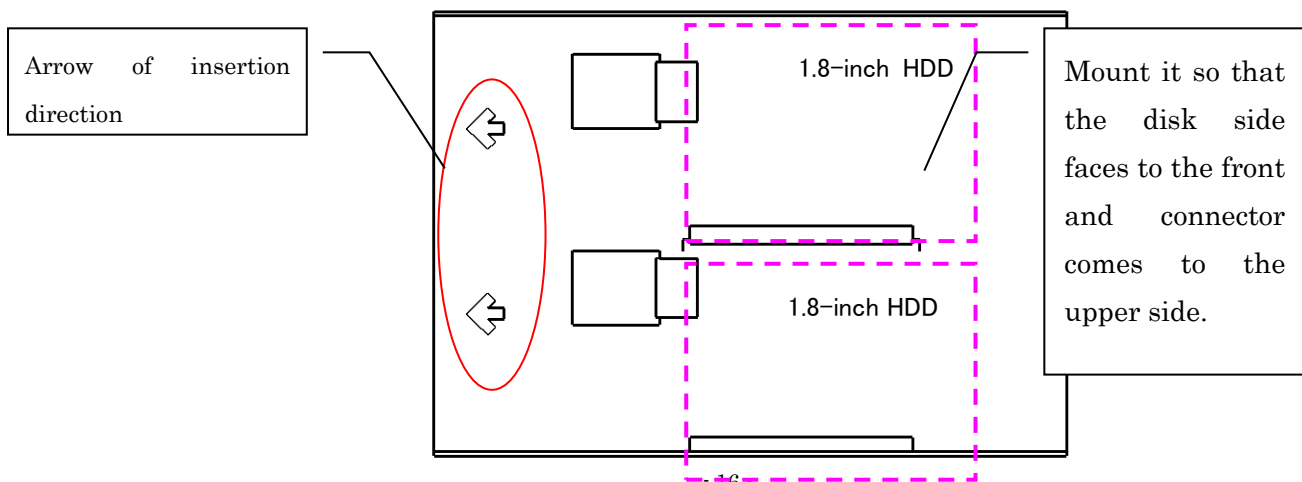


W: 54mm

No. of disk inside: 1
Thickness: 7mm

How to set the Fig1 disk for the adapter for 1.8-inch?

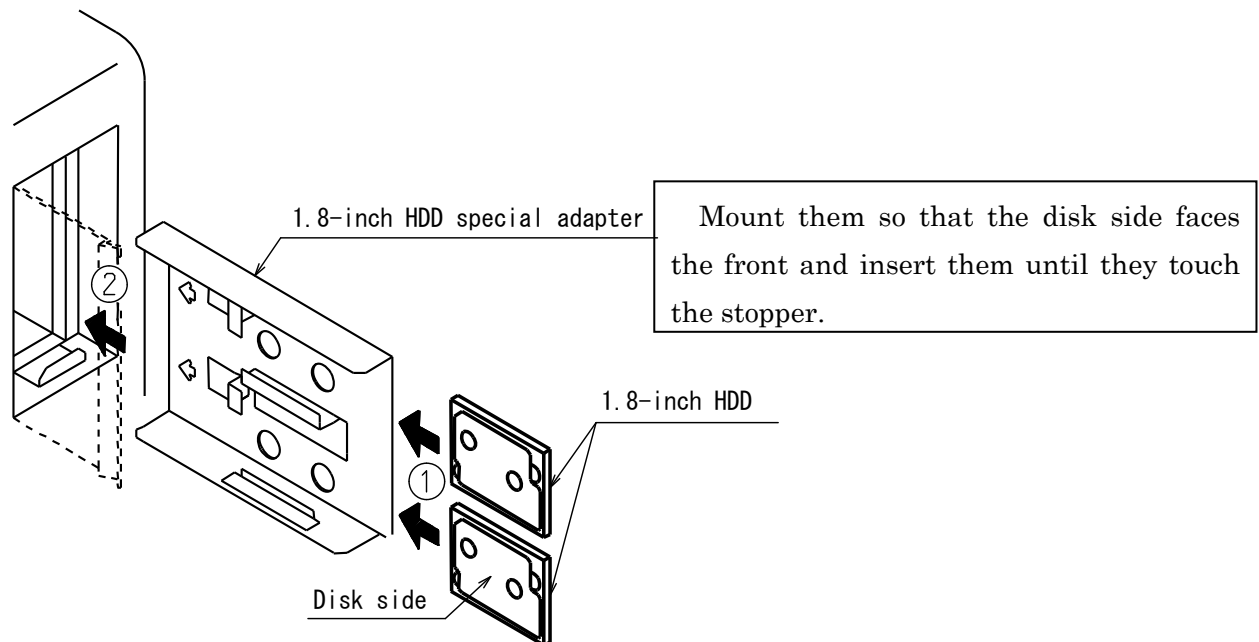
Mount 1.8-inch HDDs on the 1.8-inch special adapter.
Up to two HDDs can be processed.
(It is possible to mount just one. Either of position is available for one HDD.)





Caution

Mount them so that the disk side faces to the front. It isn't possible to do destruction processing normally when making a mistake in the direction of insertion.



- ① Mount 1-inch HDDs to be destroyed on the 1.8-inch special adapter.
- ② Insert the 1.8-inch special adapter into the media slot on the CrushBox in the direction of the arrow.
- ③ When you set the adapter, be sure that adapter is not on the stopper of the insertion slot.



Caution

When inserting the 1.8-inch special adapter into the media slot on the Crush Box, be careful not to mistake the insertion direction. Insertion in the wrong direction may result in breakage of the adapter.

1.8-inch HDD Figure 2

Connector: IDE

Size (W × D × H): 60 × 70 × 9.5 mm

(No. of the disk inside: 1)

Size (W × D × H): 60 × 70 × 7.0 mm

(No. of the disk inside: 2)

Connector



W: 60mm

No. of disk inside: 2
Thickness: 9.5mm

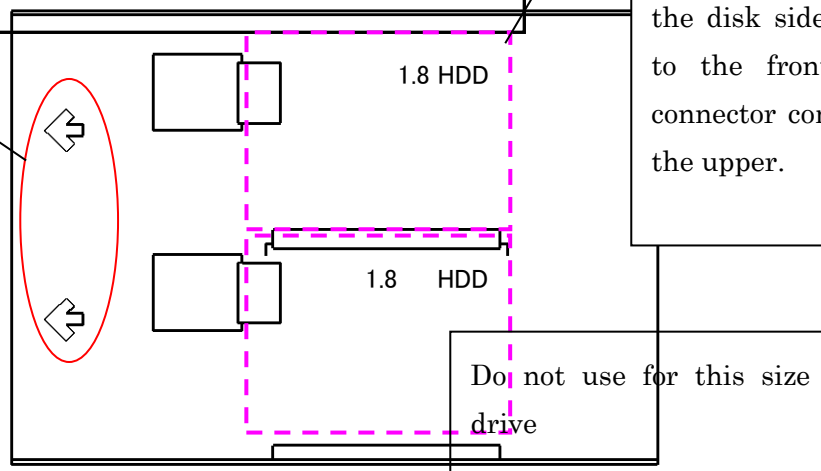
No. of disk inside: 1
Thickness: 7mm

How to set the Fig2 disk for the adapter for 1.8-inch?

It sets 1.8 inch HDD in the special adapter of 1.8 inches.
It makes a connection **only** on the upper side.

Mount it so that the disk side faces to the front and connector comes to the upper.

Arrow of insertion direction



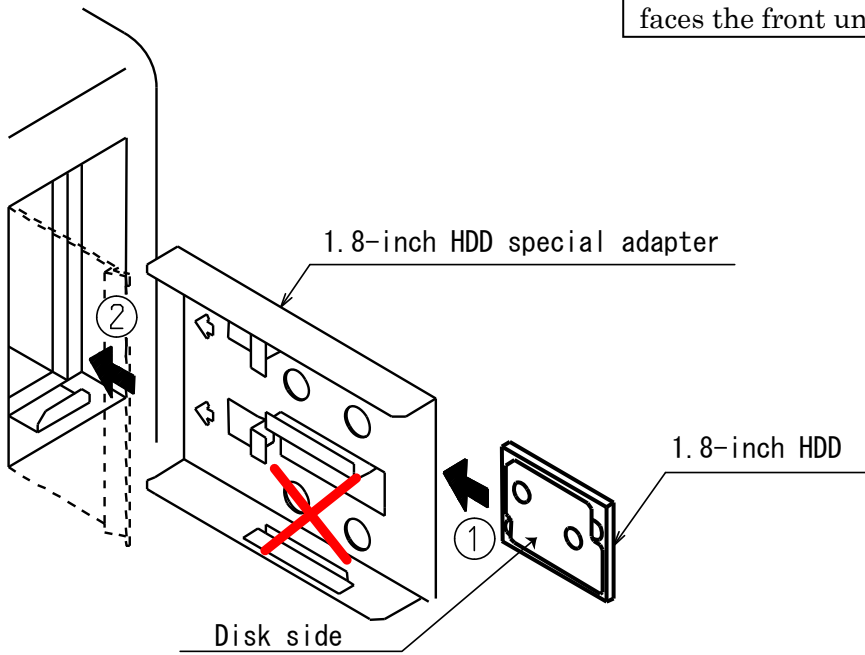
Do not use for this size drive



Caution

Mount it so that the connector is in the upper. Wrong direction may result in breaking of the adapter.

Mount the drive so that the disk side faces the front until it touches the stopper.



- ① Mount 1-inch HDDs to be destroyed on the 1.8-inch special adapter.
- ② Insert the 1.8-inch special adapter into the media slot on the CrushBox in the direction of the arrow.
- ③ When you set the adapter, be sure that adapter is not on the stopper of the insertion slot.



Caution

When inserting the 1.8-inch special adapter into the media slot on the Crush Box, be careful not to insert the drive in the wrong direction. Wrong insertion direction may result in breaking of the adapter

5. Warranty

This warranty only applies to products purchased and used in Europe.

5-1) Warranty period

For one year from the date of purchase, or if the cumulative counter is 50,000 or less.

- ※ It is recommended that you contact your place of purchase and have the product adjusted and inspected every time the cumulative counter reaches 50,000.
- ※ Note that the counter display is driven by an internal backup battery. The battery life is about six years. Have the battery replaced every five years or so. (There is a charge for the battery replacement.)

5-2) Warranty details

For failure during normal use, we will repair or exchange it free of charge if the cause falls in the scope of our responsibility.

5-3) Warranty limitation and exclusion

Failure, problems, other related defects due to improper use, or selection of products or use for an improper system.

- Changed or modified products without consultation or agreement from us.
- Failure due to worn or damaged consumable parts under severe use deviating from the product specifications.
- Failure that is not within the scope of our responsibility but caused by another system or equipment where the product is mounted.
- Failures caused by natural disaster.
- Damage due to accident including fire, water, or dropping.
- Losses related to an accident with the manufacturing equipment other than our product.

6. Failure diagnostics chart

Situation	Cause	Countermeasure	
Main switch does not turn on.	No current from power supply	Check the power supply	
Product does not start.	Failure of main switch	Main switch replacement	◎
	overcurrent	CP (10 A) replacement	
	Failure of start switch	Start switch replacement	◎
	Failure of key switch	Key switch replacement	◎
Temperature fault lamp is lit.	Overheated hydraulic pump	Suspend operation until the lamp turns off.	
Temperature fault lamp is flashing.	Operation error	Repair or replacement	◎
It moves but does not destroy.	Lack of pressure	Repair or replacement	◎
	Low ambient temperature (10 °C and below)	Perform warm-up operation. Refer to 3-4) on page 4.	
Abnormal noise.	Failure in hydraulic components	Repair or replacement	◎
Operation proceeds slowly.	Increased oil temperature	Cool it down. (Suspend for more than 30 minutes.)	
	Low ambient temperature (10°C and below)	Perform warm-up operation. Refer to 3-4) on page 4.	
	Failure in hydraulic components	Repair or replacement	◎
Electrical leakage	Damaged cord	Replacement	◎
	Insulation failure of electric components	Repair and replacement of defective parts	◎
Oil leakage	Failure in hydraulic components	Repair or replacement	◎
No counter display	Backup battery life	Battery replacement	◎

The ◎mark indicates the need for repairs in our factory. Basically the product should be returned to us. Contact your place of purchase for details.

Replacement and collection of the counter backup battery (Lithium battery) is conducted at our company when the product is returned and repaired.

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