i-PRO

HDD Compatibility Chart (only for China)

Version : 16th May 2023

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(*) For models that have been discontinued for more than 7 years, the compatibility chart will be deleted.

Important Notes

Please DO NOT fix two screws into bottom side of HDD (⇨ marks below),
because screw length is longer than depth of tapped hole .

Important Notes

Important information : **The preparations to use Seagate HDD**
(For WJ-NX400K/WJ-HXE400/WJ-ND400K/WJ-HDE400/WJ-HD716K/WJ-HD616K)

To use Seagate HDD, the following 2 items must be performed before the installation of HDDs.

1. Turn off SSC (SSC : Spread Spectrum Clocking, default setting : "ON")

   Caution : If SSC is NOT turned off, the disk will never be recognized by NVR.

   ⇒ See Next Page

2. Choose the screw to use

   Caution : If do not install the correct screws, the HDD will not be properly secured to the case, and may experience HDD errors or malfunction.

   The screws to install the HDD depend on the serial number of the NVR.

   ⇒ See Page 5

Caution :
We will not take responsibility for any failure that occurs by performing an operation different from the detailed procedure from the next pages.

Important Notes

The preparations to use Seagate HDD
1) The items and procedure to turn off SSC

◆ The required items

    ・ Windows PC with "SeaChest utilities"　*1

    ・ USB to SATA conversion adapter for 3.5 inch HDD with AC power input

        Note ： Adapter with special functions such as clone function cannot be used.

    ・ HDDs to be changed

  *1： the download site of "SeaChest Utilities"

              https://www.seagate.com/support/software/seachest/

◆ Procedure to turn off SSC setting

  Described on page 15 to 19

      ⇒　See Page 15

The preparations to use Seagate HDD
    2) Choose the screws

◆ The screws to install the HDD differ depending on the serial No. of the NVR.

Ex.) Serial No. : TLV00001
        (1st character =year(T:2020), 2nd character =month(L:Dec)

		Serial No(example)											
1st character	year	R	S	T	U	V	W	X	Y	A	B	C	D
		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2nd character	month	A	B	C	D	E	F	G	H	I	J	K	L
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

【Case 1】 : Serial No. is TLxxxxxx or later   ⇒ See page 6 to 7
        (1st character T=2020, 2nd character L =Dec)

【Case 2】 : Serial No. is TKxxxxxx or earlier   ⇒ See page 8 to 9
        (1st character T=2020, 2nd character K =Nov)

The preparations to use Seagate HDD ／ Choose the screws【 Case 1 】

Screw/Washer List 【 Case 1 : TL*xxxxx or later 】

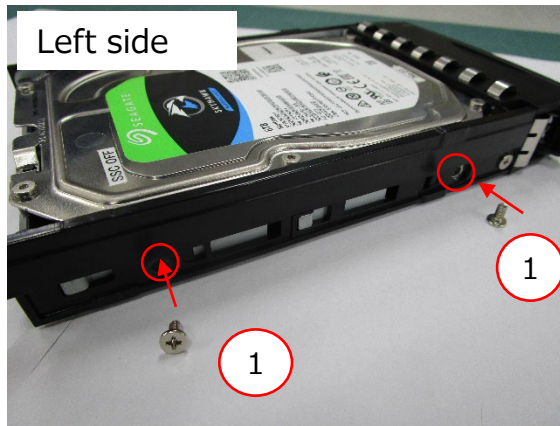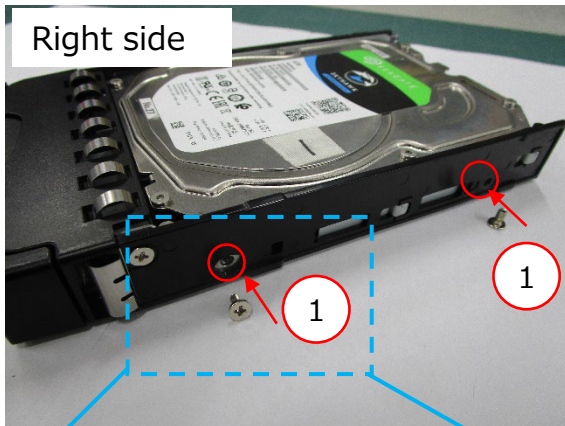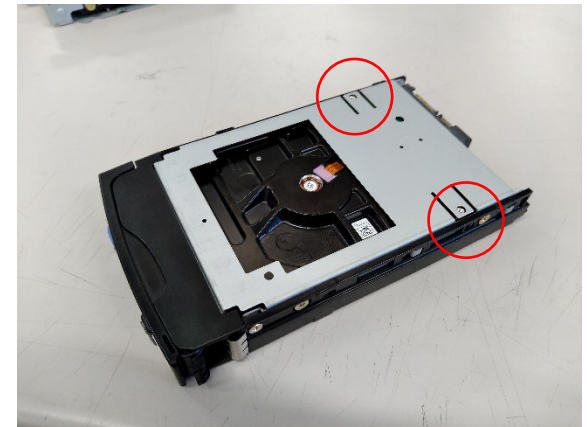| Screw No	Screw or washer	type	color	quantity			Standard Accessories	
				WJ-NX400K WJ-HXE400	WJ-NX300K Not applicable for China	WJ-NX200K Not applicable for China		
①	Screw	#6-32UNC L=5.3 mm	Silver	6pcs x 9HDDs *1	4pcs x 4HDDs	4pcs x 2HDDs	YES	**Provided with NVR** *1 Use 36（4pcs X 9HDDs）screws to install Seagate HDDs and WD 5TB/6TB HDDs. Use 54（6pcs X 9HDDs）screws to install other WD HDDs except for 5TB/6TB.

Screw No.①

Sliver color

i-PRO

Important Notes

Installation of the HDD for WJ-NX400K/WJ-HXE400 【 Case 1 : TL*xxxxx or later 】

Install the HDD into the HDD Unit
using 4 fixing screws （Screw No.①）

Right side

1

1

After fixing

Screw No.①

Sliver color

Do not fix the two places
on bottom with screws

Left side

1

1

:::PRO

The preparations to use Seagate HDD ／ Choose the screws【Case 2】

Screw/Washer List 【Case 2 : TK*xxxxx or earlier】

Screw No	Screw or washer	type	color	quantity				Standard Accessories	
				WJ-NX400K WJ-HXE400 WJ-ND400K WJ-HDE400	WJ-NX300K Not applicable for China	WJ-NX200K Not applicable for China	WJ-HD716K WJ-HD616K (WJ-HDU40K)		
②	Screw	#6-32UNC L=6 mm	Gold	6pcs x 9HDDs *1	4pcs x 4HDDs	4pcs x 2HDDs	6pcs x 4HDDs *2	YES	**Provided with NVR** *1 Use 36（4pcs X 9HDDs）screws to install Seagate HDDs and WD 5TB/6TB HDDs. Use 54（6pcs X 9HDDs）screws to install other WD HDDs except for 5TB/6TB. *2 Use 16（4pcs X 4HDDs）screws to install Seagate HDDs and WD 5TB/6TB HDDs. Use 24（6pcs X 4HDDs）screws to install other WD HDDs except for 5TB/6TB.
③	washer	M4 spring washer	-	2pcs x 9HDDs	4pcs x 4HDDs	4pcs x 2HDDs	2pcs x 4HDDs	NO	**Locally procured**

Screw No.③ (spring washer) spec

Spring Washer	d(mm)		b(mm)	t(mm)	D(mm)	Material
	max	min	min	min	Max	
4 (For M4)	4.5	4.1	1.4	1	7.6	SUS

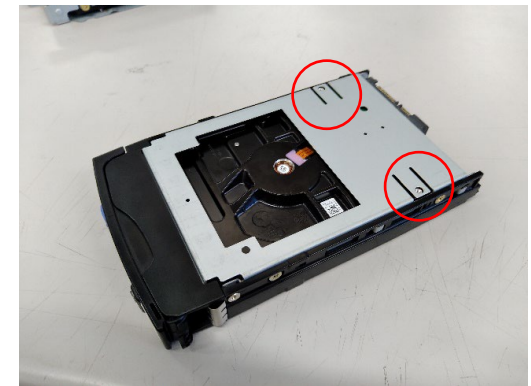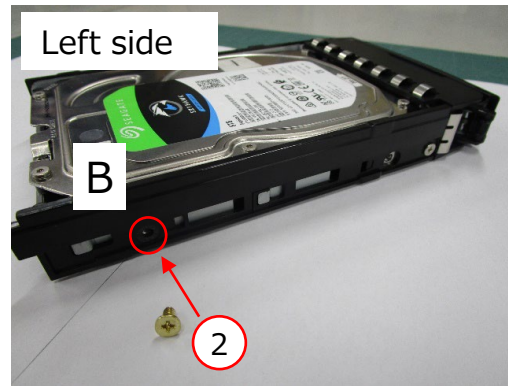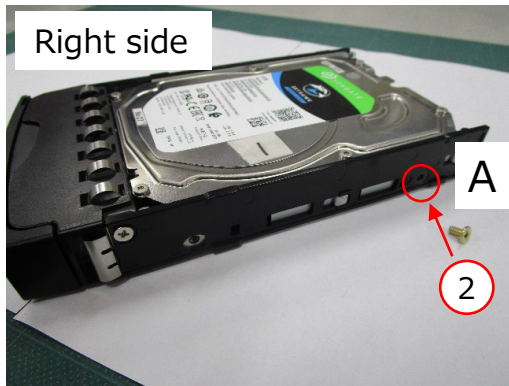$$t = \frac{T1+T2}{2}$$

Screw No.②
gold color

Screw No.③
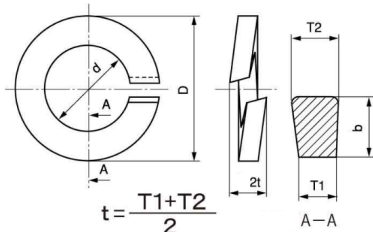
Important Notes

The preparations to use Seagate HDD / Choose the screws【 Case 2 】

Installation of the HDD for WJ-NX400K/WJ-HXE400/WJ-ND400/WJ-HDE400/ WJ-HD716/WJ-HD616 【Case 2 : TK*xxxxx or earlier 】

Install the HDD into the HDD Unit
using 2 fixing screws (②), A and B places

Right side

A

②

Left side

B

②

Do not fix the two places
on bottom with screws

C and D places, fix with 2washers (③) and 2 screws (②)

Right side

C
③
②

Left side

D
③
②

Screw No.② | Screw No.③

gold color

Washer③

Screw②

After fixing
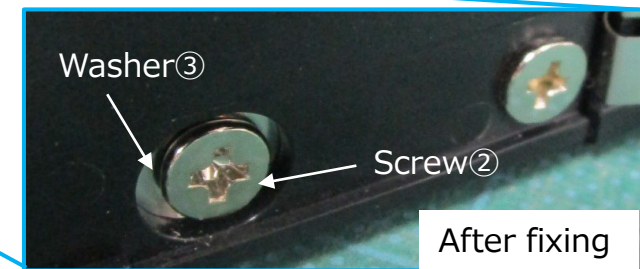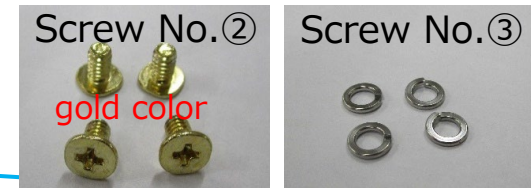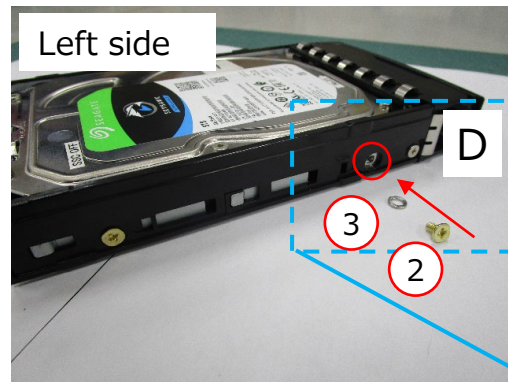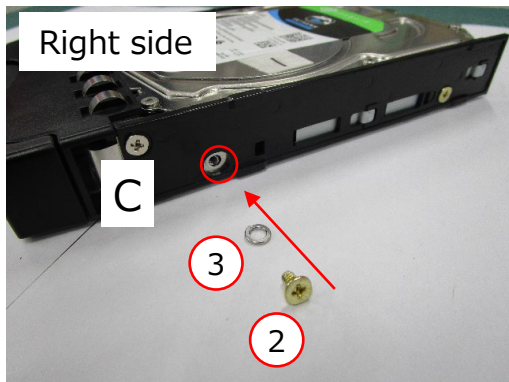
HDD Compatibility Chart

WJ-NX400K
WJ-HXE400

3.5" SATA – Advanced Format

Latest Firmware Version : V5.10 (NX400)
V1.11 (HXE400)

Current HDDs

Capacity	Vendor	Model	Note
8TB	Western Digital	WD84EJRX-89B2TY0	*2
6TB		WD63EJRX-89BFMY0	*2
		WD62EJRX-89B2VY0	*2
	Seagate	ST6000VX001	*2, *3
4TB	Western Digital	WD42EJRX-89BFNY0	
		WD40EJRX-89AKWY0	
	Seagate	ST4000VX016	*3
3TB	Western Digital	WD30EJRX-89AKWY0	
2TB		WD22EJRX-89BEMY0	
		WD20EJRX-89AKWY0	

Discontinued HDDs

Capacity	Vendor	Model	Note
6TB	Western Digital	WD60PURX-64T0ZY1	*2
		WD60PURX-64T0ZY0	*2
		WD60EJRX-89MP9Y1	*2
		WD60EFRX-68MYMN1	*2
		WD60EFRX-68L0BN1	*2
5TB		WD50PURX-64T0ZY0	*2
		WD50EFRX-68MYMN1	*2
		WD50EFRX-68L0BN1	*2
4TB		WD40PURX-64NZ6Y0	
		WD40PURX-64GVNY0	
		WD40EJRX-89T1XY0	
		WD40EFRX-68WT0N0	
3TB		WD30PURX-64P6ZY0	
		WD30EJRX-89G3VY0	
		WD30EFRX-68EUZN0	
2TB		WD20PURX-64P6ZY0	
		WD20EJRX-89G3VY0	
		WD20EFRX-68EUZN0	

*1 The difference between "-74" and "-85" depends on the WD sales route.

*2 Please refer to page 2, not to fix two screws into bottom side of HDD.

*3 To use Seagate SkyHawk series, it is necessary to set the HDD SSC setting to "OFF" in advance. And need to choose the screws to install the HDDs. Please refer to page 3 for instructions.

HDD Compatibility Chart

WJ-NV200K

3.5" SATA

Latest Firmware Version : V2.62

Current HDDs

Capacity	Vendor	Model	Note
6TB	Western Digital	WD63EJRX-89BFMY0	
		WD62EJRX-89B2VY0	
	Seagate	ST6000VX001	*3
4TB	Western Digital	WD42EJRX-89BFNY0	
		WD40EJRX-89AKWY0	
3TB		WD30EJRX-89AKWY0	
2TB		WD22EJRX-89BEMY0	
		WD20EJRX-89AKWY0	

Discontinued HDDs

Capacity	Vendor	Model	Note
6TB	Western Digital	WD60PURX-64T0ZY1	
		WD60PURX-64T0ZY0	
		WD60EJRX-89MP9Y1	
		WD60EFRX-68MYMN1	
		WD60EFRX-68L0BN1	
5TB		WD50PURX-64T0ZY0	
		WD50EFRX-68MYMN1	
		WD50EFRX-68L0BN1	
4TB		WD40PURX-64NZ6Y0	
		WD40PURX-64GVNY0	
		WD40EURX-63BMCY0	
		WD40EJRX-89T1XY0	
		WD40EFRX-68WT0N0	

Capacity	Vendor	Model	Note
3TB	Western Digital	WD30PURX-64P6ZY0	
		WD30EURX-63T0FY0	
		WD30EJRX-89G3VY0	
		WD30EFRX-68EUZN0	
2TB		WD20PURX-64P6ZY0	
		WD20EURX-63T0FY0	
		WD20EJRX-89G3VY0	
		WD20EFRX-68EUZN0	
1TB		WD10EURX-63FH1Y0	

*1 The difference between "-74" and "-85" depends on the WD sales route.

*2 Please refer to page 2, not to fix two screws into bottom side of HDD.

*3 To use Seagate SkyHawk series, it is necessary to set the HDD SSC setting to "OFF" in advance. And need to choose the screws to install the HDDs. Please refer to page 3 for instructions.

HDD Compatibility Chart

WJ-ND400K
WJ-HD616K
WJ-HD716K
WJ-HDE400

Very Important Notification for Compatibility of i-PRO NVR/DVR's with AF (Advanced Format) HDD's

ND400	HD616/716	HDE400	Note
V3.20 or above	V2.30 or above	V1.20 or above	These versions are compatible with AF HDD's. (AF HDD has 4K-byte data in one sector, while legacy HDD has 512byte in one sector.)
V3.10 or below	V2.20 or below	V1.07 or below	These versions are not compatible with AF HDD's. If AF HDD will be installed into DVR's/NVR of these older versions, lack of recorded image/video, frequent restart of recorder, or some unexpected troubles may happen.

HDD Compatibility Chart

WJ-ND400
WJ-HDE400

Latest Firmware Version : V6.10 (ND400)
V1.31 (HDE400)

3.5" SATA – Advanced Format

ND400 MUST be V3.20 or above. (Please refer to page 12)

Current HDDs

Capacity	Vendor	Model	Note
6TB	Western Digital	WD63EJRX-89BFMY0	*2
		WD62EJRX-89B2VY0	*2
	Seagate	ST6000VX001	*2, *3
4TB	Western Digital	WD42EJRX-89BFNY0	
		WD40EJRX-89AKWY0	
3TB		WD30EJRX-89AKWY0	
2TB		WD22EJRX-89BEMY0	
		WD20EJRX-89AKWY0	

Discontinued HDDs

Capacity	Vendor	Model	Note
6TB	Western Digital	WD60PURX-64T0ZY1	*2
		WD60PURX-64T0ZY0	*2
		WD60EJRX-89MP9Y1	*2
		WD60EFRX-68MYMN1	*2
		WD60EFRX-68L0BN1	*2
5TB		WD50PURX-64T0ZY0	*2
		WD50EFRX-68MYMN1	*2
		WD50EFRX-68L0BN1	*2
4TB		WD40PURX-64NZ6Y0	
		WD40PURX-64GVNY0	
		WD40EJRX-89T1XY0	
		WD40EFRX-68WT0N0	

Capacity	Vendor	Model	Note
3TB	Western Digital	WD30PURX-64P6ZY0	
		WD30EJRX-89G3VY0	
		WD30EFRX-68EUZN0	
2TB		WD20PURX-64P6ZY0	
		WD20EJRX-89G3VY0	
		WD20EFRX-68EUZN0	

*1 The difference between "-74" and "-85" depends on the WD sales route.

*2 Please refer to page 2, not to fix two screws into bottom side of HDD.

*3 To use Seagate SkyHawk series, it is necessary to set the HDD SSC setting to "OFF" in advance. And need to choose the screws to install the HDDs. Please refer to page 3 for instructions.

HDD Compatibility Chart

WJ-HD616K
WJ-HD716K
WJ-HDE400

Current Firmware Version : V2.63 (HD616/716)
V1.20 (HDE400)

3.5" SATA – Advanced Format

HD616/HD716 MUST be V2.30 or above. (Please refer to page 12)

Current HDDs

Capacity	Vendor	Model	Note
6TB	Western Digital	WD63EJRX-89BFMY0	*2
		WD62EJRX-89B2VY0	*2
	Seagate	ST6000VX001	*2, *3
4TB	Western Digital	WD42EJRX-89BFNY0	
		WD40EJRX-89AKWY0	
3TB		WD30EJRX-89AKWY0	
2TB		WD22EJRX-89BEMY0	
		WD20EJRX-89AKWY0	

Discontinued HDDs

Capacity	Vendor	Model	Note
6TB	Western Digital	WD60PURX-64T0ZY1	*2
		WD60PURX-64T0ZY0	*2
		WD60EJRX-89MP9Y1	*2
		WD60EFRX-68MYMN1	*2
		WD60EFRX-68L0BN1	*2
5TB		WD50PURX-64T0ZY0	*2
		WD50EFRX-68MYMN1	*2
		WD50EFRX-68L0BN1	*2
4TB		WD40PURX-64NZ6Y0	
		WD40PURX-64GVNY0	
		WD40EJRX-89T1XY0	
		WD40EFRX-68WT0N0	

Capacity	Vendor	Model	Note
3TB	Western Digital	WD30PURX-64P6ZY0	
		WD30EJRX-89G3VY0	
		WD30EFRX-68EUZN0	
2TB		WD20PURX-64P6ZY0	
		WD20EJRX-89G3VY0	
		WD20EFRX-68EUZN0	

*1 The difference between "-74" and "-85" depends on the WD sales route.

*2 Please refer to page 2, not to fix two screws into bottom side of HDD.

*3 To use Seagate SkyHawk series, it is necessary to set the HDD SSC setting to "OFF" in advance. And need to choose the screws to install the HDDs. Please refer to page 3 for instructions.

1. Download SeaChest Utilities from the following URL then install it to Windows PC.

   https://www.seagate.com/support/software/seachest/

2. Connect target HDD via USB to the PC which SeaChest Utilities is installed.

3. Double click SeaChest Utilities icon on desktop and launch SeaChest Utilities.

SeaChest Utilities
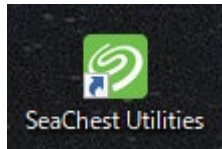
4. Enter the following command from Windows Command Prompt.

Seachest_Basics_x64_windows.exe --scan

Seagate Model# won't be displayed because HDD is connected via USB bridge chip.
Check ID# (PD1 for above case) of target drive.

5. Confirm the current SSC condition by entering the following command.

Seachest_Configure _x64_windows.exe -d PD1 --ssc info

default value : SSC Feature is enabled
(SSC is "ON")

6. Turn off SSC by entering the following command.

　　　　Seachest_Configure_x64_windows.exe -d PD1 --ssc disable


```
C:¥Program Files¥Seagate¥SeaChest>SeaChest_Configure_x64_windows.exe -d PD1 --ssc disable
==========================================================================================
SeaChest_Configure - Seagate drive utilities - NVMe Enabled
Copyright (c) 2014-2022 Seagate Technology LLC and/or its Affiliates, All Rights Reserved
SeaChest_Configure Version: 2.1.0-3_2_1 X86_64
Build Date: Jul 26 2022
Today: Wed Nov  2 09:50:50 2022
==========================================================================================

¥¥.¥PhysicalDrive1 - 016-3CV104 - - - - ATA
Successfully set SSC feature to disabled
Please power cycle the drive to make the change take effect.
```

Power cycle the drive to make the change take effect.
(No need to close SeaChest Utilities during power cycle)

7. Confirm SSC setting had been changed by entering the following command.

> Seachest_Configure_x64_windows.exe -d PD1 --ssc info

```
C:¥Program Files¥Seagate¥SeaChest>SeaChest_Configure_x64_windows.exe -d PD1 --ssc info
===========================================================================================
 SeaChest_Configure - Seagate drive utilities - NVMe Enabled
 Copyright (c) 2014-2022 Seagate Technology LLC and/or its Affiliates, All Rights Reserved
 SeaChest_Configure Version: 2.1.0-3_2_1 X86_64
 Build Date: Jul 26 2022
 Today: Wed Nov  2 09:53:28 2022
===========================================================================================

¥¥.¥PhysicalDrive1 - 016-3CV104 - 152D20337A0C -  - ATA
SSC Feature is disabled
```

SSC is "OFF"

8. Power off USB-SATA converter and then remove the HDD from the converter.

Recorder Maintenance Guide

Introduction

As network disk recorders used for security system generally operate all-year-round, they need regular maintenance to avoid system failures and to keep their performance.

What is a hard disk drive?

What is a hard disk drive?
- A hard disk drive (an HDD) is a device which reads and writes digital data magnetically with the disks (platters) that spin and the head floating above the disks.
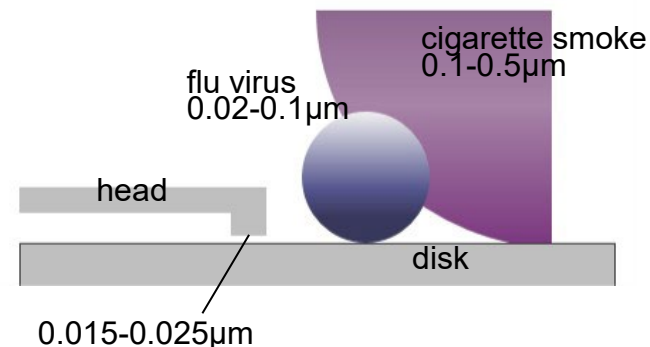
head

disks

Points to Note

Point # 1 Avoid Vibration

The magnetic head floating above the disks in an HDD is set extremely close to the disks with the spacing that even cigarette smoke or flu virus cannot go through. Therefore, vibration can cause head crash and generate tiny dust if the head gets out of correct position. This results in creating fatal scratches in an HDD. Please install your recorder in a stable place away from declination, vibration or physical impact.
Also, as an impact of sound (sound pressure) such as the radiation sound from gas distinguishing agent system can affect the speed of data transfer on HDDs, please install your recorder in the place without loud noise.

HDD = Precision Device

cigarette smoke
0.1-0.5µm

flu virus
0.02-0.1µm
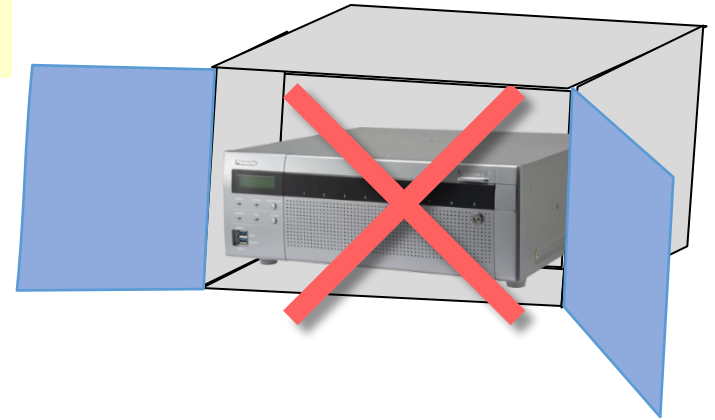
head

disk

0.015-0.025µm

Recorder Maintenance Guide

Point # 2 Keep Your Recorder from Getting Hot

Keeping HDDs exposed to high temperature results in the deterioration of its head and disks, and it can shorten the HDD life as well. Please consider ventilation when installing. The ambient operating temperature is 5 degrees Celsius to 45 degrees Celsius (the recommended temperature is 25 degrees Celsius).

Consider Ventilation When Installing

Point # 3 Avoid Static Electricity and Condensation

Static electricity can be the cause of electronic parts failure in an HDD.
Condensation can cause a malfunction of a recorder as the head sticks to the disk due to the water.
Condensation occurs;
 - when relocating the recorder to a place with sudden change in temperature and humidity.
 - in the room just after heated.
 - when the recorder is relocated from the cooled place to the heated place with high humidity.

Prevent Static Electricity and Condensation
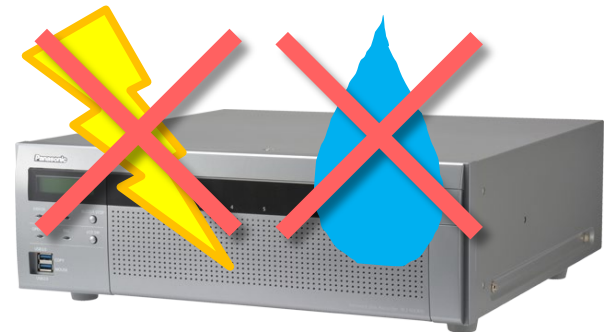
Recorder Maintenance Guide

## Regular Maintenance is Necessary for a Network Disk Recorder

As a network disk recorder has HDDs for data storage, regular maintenance is necessary to use the recorder under its optimal conditions.

The Major Causes of Network Disk Recorder Failure

The Major causes of network disk recorder failure results from HDD malfunctions as below.
a. The head crashes on the disk due to vibration or impact on the recorder and that creates scratches on the disk.
b. Operating your recorder in high temperature environment causes the incorrect spacing between the head and the disks and that causes a head crush and creates scratches on the disk.
c. Non-proper spin of the motor and the deterioration of the head's characteristics occur due to the long term use of HDDs. These can cause the write/ read error. The scratches on the disk gets larger in several months and causes a recorder failure.

Cutaway of an HDD

spindle motor

disk

head
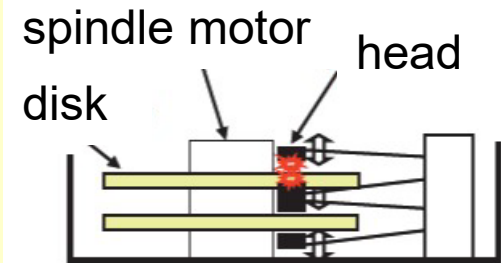
Tips for the Stable Operation of Your Network Disk Recorder

As the parts in a disk recorder are consumable, it is necessary to maintain your recorder regularly. The consumable parts in a network disk recorder are the followings.
HDD Unit / cooling fan / built-in backup battery / damper rubber for fixing HDDs. (Please note that the applied parts varies depending on the models.)
Maintenance including parts exchange leads to the stable operation of your recorder.
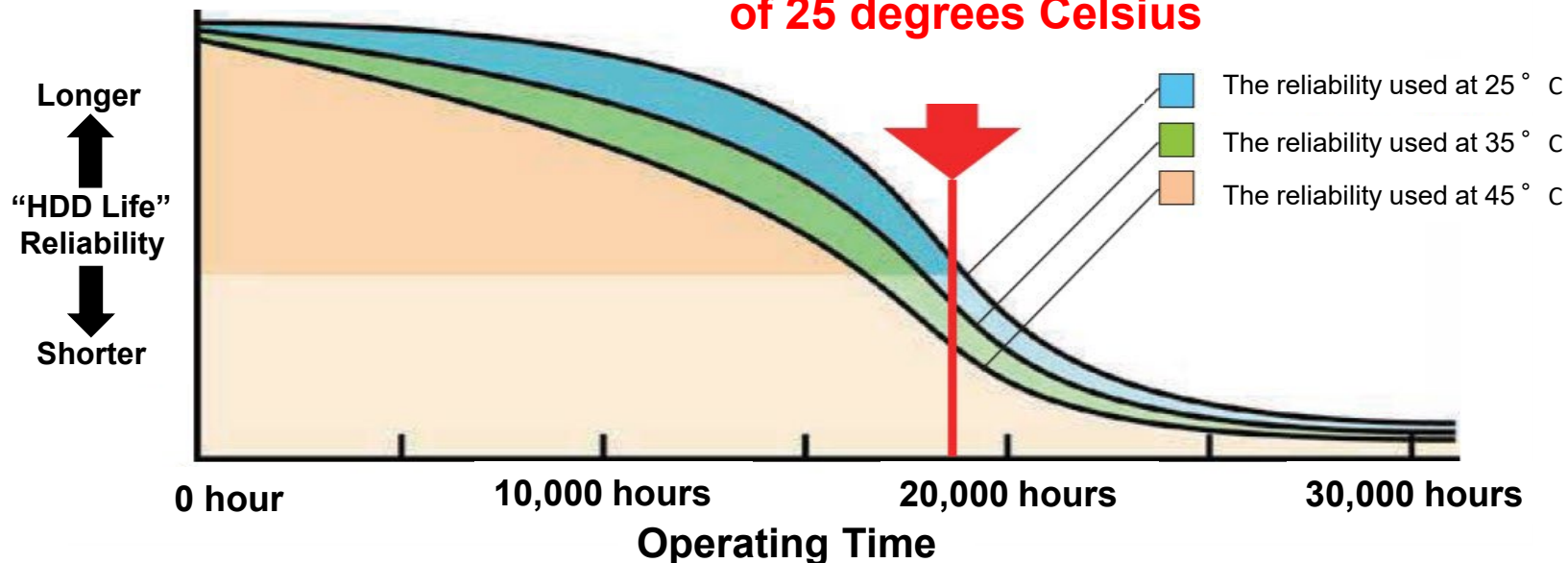
Recorder Maintenance Guide

Estimated Replacement Period of an HDD

Although the HDD life differs depending on the usage environment, an HDD is certainly a consumable device. When used at an ambient temperature of 25 degrees Celsius, errors such as write error may start to occur at the operating time of 20,000 hours. When it reaches over 30,000 hours, the HDD can die due to the deterioration of the read/ write head or the motor in it. Keep the ambient temperature under 25 degrees Celsius and replace HDDs at the point of 18,000 hours for your secure data management.

Please note that this is our estimated replacement period for reference and does not guarantee the life of your HDDs.

Hour Meter:
Approx. 9,000h = 1 year, : Approx. 18.000h = 2 years, Approx. 26,000h = 3 years, Approx. 35,000h = 3 years, Approx. 44,000h = 5 years

HDD Life Characteristics

- Excerpted from Our HDD Reliability Data

Replacement time of the HDD used at an ambient temperature of 25 degrees Celsius

Longer

↑

"HDD Life" Reliability

↓

Shorter

The reliability used at 25 ° C

The reliability used at 35 ° C

The reliability used at 45 ° C

0 hour   10,000 hours   20,000 hours   30,000 hours

Operating Time

Recorder Maintenance Guide

HDD hour meter warning

HDD hour meter warning is a function that performs a warning when the operating time of an HDD reaches a specified level. With default setting, it performs a warning at the operating time of 20,000 hours where errors such as write error can start to occur. As described on the previous slide, the reliability of an HDD starts to decrease rapidly before the operating time reaches 20,000 hours. Therefore we recommend to replace HDDs at the point of 18,000 hours to prevent possible failures and manage data securely.

Maintenance > System management

| System information | HDD information | System management |

System setup

Error output duration	2 s
Error buzzer duration	2 s
Safe shutdown time	10 s
HDD stand-by control mode	Off
HDD hour meter warning	20000 h
Auto data delete	Off
Camera time auto synchronization	On

Logs

| Access log | View > |
| Operation log | View > |
| Network log | View > |

Functions for maintenance

| Registration of license (This product, camera extension, etc.) | Setup > |
Registration of license (Security)	Setup >
Registration of license (Optional extension)	Setup >
Reset all settings	Execute >
Save data (to USB medium)	Execute >
Load data (from USB medium)	Execute >
Firmware update	Execute >
Other	Setup >

Recorder Maintenance Guide
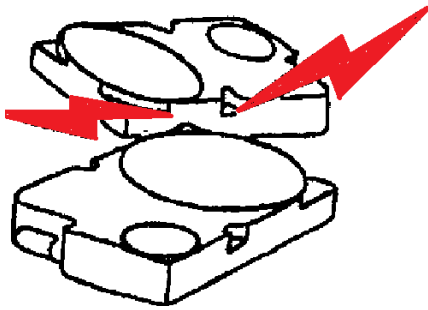
To Prevent HDD troubles ….
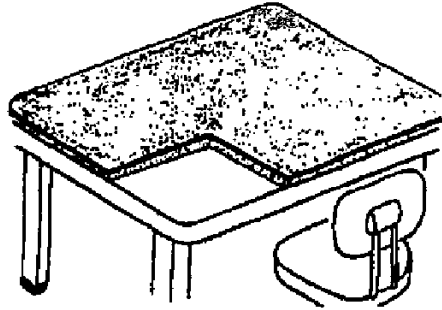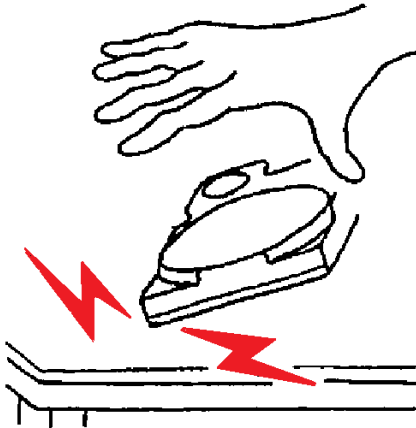
Use Antistatic & shock prevention mat
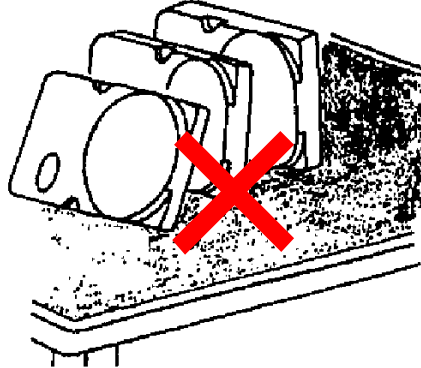
Do not place vertically
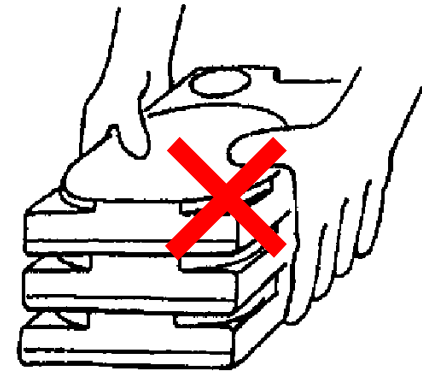
Do not stack

Do not hit

Do not drop

Do not use a regular electric screwdriver