GOBLiN

HDD Image Maker

User Guide

V 1.0

EN

July, 2013

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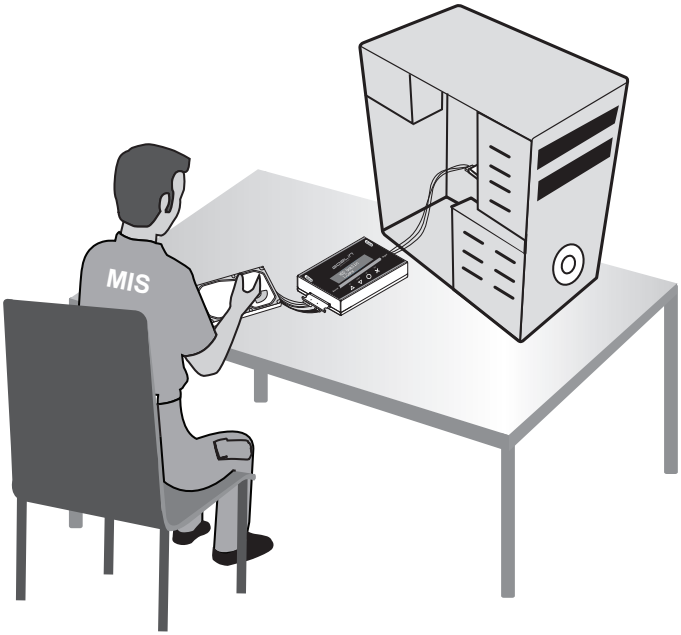
Chapter 1.
Product Overview

1. Overview

Goblin HDD Image Maker combines functions all in one, to copy, to backup, to restore by just using fast keys, which easily saves a lot of costs, times, and rooms. Goblin Series offer high transfer speed (16G/min) which run much faster, suitable especially for MIS people. Goblin can copy several hard disks as images to ONE big master HDD. Also, it restores the selected images back to the original hard disks.

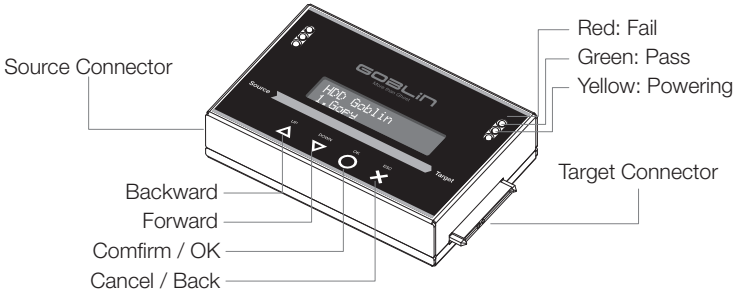


2. Features

- ⊙ MIS & IT professional usage for HDD image backup and restore.
- ⊙ Backup up to 100 HDD-images into 1 big HDD.
- ⊙ Supporting HDD capacity up to 32TB (HS268).
- ⊙ Select image to restore back to its original HDD.
- ⊙ Support to backup data and system only and skip empty area, which saves copying time & storage capacity.
- ⊙ Support quick copy for all major formats: Linux (ext2, ext3, ext4), Windows (NTFS, FAT16, FAT32, FAT64), Mac OS (HFS, HFS^{+}, HFSX).
- ⊙ Up to 16GB/min transfer speed (HS268), copying is much stable without operation under PC.
- ⊙ Goblin does not compress HDD images, no risk of data loss.
- ⊙ Stand alone, no PC required.
- ⊙ One fast key for HDD copying.
- ⊙ Setting to automatically skip HDD error sectors.
- ⊙ Support 2.5" and 3.5" SATA HDD, SSD and eSATA.
- ⊙ Support 4 different duplication modes:
  - Data quick copy (System and files)
  - ALL Partitions
  - Whole HDD
  - Percentage
- ⊙ Automatically detect and show the bad sector quantity.
- ⊙ Lightweight portable design.

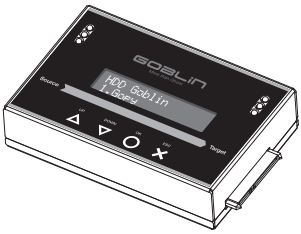
3. System Overview

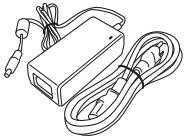
A. Appearance

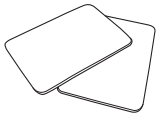


Function	Item	Description
Connector	Source connector	To connect left side to source HDDs.
	Target connector	To connect right side to target HDDs.
Indicator	Red (Fail)	Red light on, to indicate bad section or error being discovered.
	Green (Pass)	Green light on, to indicate work passing.
	Yellow (HDD Power on)	Yellow light on, to indicate the side well connected.
Key	▽ UP	To go to the previous page.
	△ DOWN	To go to the next page.
	◯ OK	To confirm the selection or enter this page.
	× ESC	To exit the page or cancel the selection.

B. Package Content

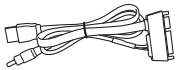

Goblin HDD Image Maker × 1


Power adapter


HDD Pad × 2


User Guide


SATA Cable
10cm×2 / 45cm×1


eSATA Cable × 2

C. Connecting HDD

A. SATA HDD

B. eSATA HDD

4. Function Table

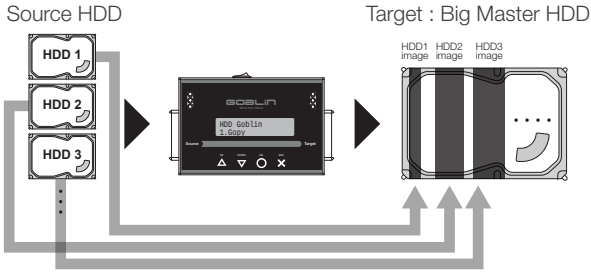
Function	Sub-Item		Description
1. Copy	1. HDD ▶ Image		To backup source HDDs as images to "Big Master target HDD".
	2. Image ▶ HDD		To restore images from "Big Master target HDD" back to the original HDDs.
	3. HDD ▶ HDD		To copy HDDs exactly the same from source to target.
2. Compare	1. HDD ▶ Image		To compare between the source HDDs and the target "Big Master target HDD".
	2. Image ▶ HDD		To compare between the source "Big Master target HDD" and target HDDs.
	3. HDD ▶ HDD		To compare between source HDD and target HDD.
3. Copy+Compare	1. HDD ▶ Image		To backup source as images to target HDD and then compare.
	2. Image ▶ HDD		To restore images back to target HDDs and then compare.
	3. HDD ▶ HDD		To copy from source HDD to target HDD and then compare.
4. Image Manager	1. Show HDD Info		To show info of Big Master target HDD.
	2. Show Image Info		To show Image files of Big Master target HDD.
	3. Remame Image		To rename Image files of tBig Master target HDD.
	4. Delete Image		To delete image files of Big Master target HDD.
	5. Format HDD #2		To format the target hard disk used for Big Master target HDD.
5. Utility	1. Show Disk Info.	1. Model Number	To check the model No. of HDD, FW version, serial number, etc.
		2. Version of Firmware	
		3. Serial Number	
		4. Device Power Cycle	
		5. Power-on Hours	
		6. Reallocation Event Count	
		7. Off-Line Scan Uncorrectable Sector Count	
		8. Seek Error Rate	
		9. Temperature	
	2. System Info		To check version of the system, build number, etc.
	3. Update System	1. Update BIOS	To update the system from BIOS HDD.
		2. Create Update HDD	To download BIOS to HDD from PC.
6. Setup	1. Copy Area	System and Files	To set HDD data area only as copying source.
		All Partitions	To set HDD partition area as copying source.
		Whole HDD	To set complete HDD as copying source.
		Percentage(%)	To set copying source by starting and ending percentage.
	2. Skip Error		To setup number of skipped errors from 0 to 65535, or unlimited.
	3. Language		English, Japanese
	4. Advanced Setup	Unknown Format	To skip or copy unknown area after failed to identify its format.
		Stop Motor Time	To set the waiting time for the motor to stopping time.
	5. Restore Default		To restore back to original factory parameter settings

Chapter 2.
How to Start to Backup HDD?

There are 2 backup modes:

(1) HDD image backup

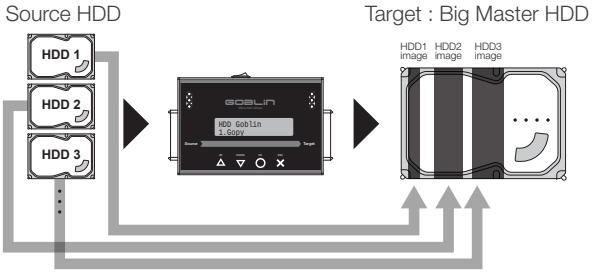
Backup several source HDDs as several images to "Big Master target HDD".



(2) One to one HDD duplication

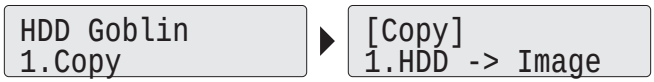
Copy the target HDD as exactly as the source HDD.

1. Start to Backup Backup your HDD as an image.

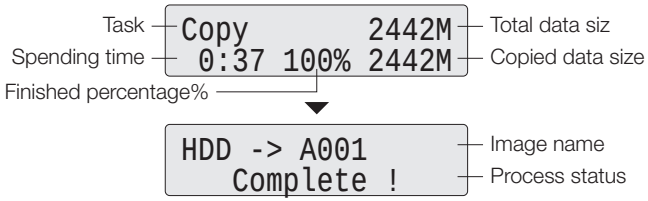


Connect hard disks into source port to backup as image. Connect "Big Master" hard disk to the target port. Press "O" to start to backup.

1 Select function table 1.Copy >> 1.HDD -> Image.
Press "O" to start copying from source disk to target disk.



2 Once duplication is started, the progress information will be shown on LCD. When the task is finished, the result of copying task will be shown "Complete" on LCD.



Notice
The default setting is the quick copy mode "System and Files". (check chapter 2.4 for more settings)

2. Start to Backup HDD to Another HDD.

This makes HDDs backup exactly the same from source to target.

Connect a source hard disk into source port; connect a hard disk to backup into the target port. Press "O" to start to backup.

1 Select function table 1.Copy >> 3.HDD -> HDD. Press "O" to start to copy from hard disk to hard disk.

```
[Copy]
3.HDD -> HDD
```

2 Once duplication is finished, the result of copying task shows on LCD as "Pass " or "Fail ".

```
Copy       2442M
 0:38 100% 2442M
```

▶

```
Pass 0:37
 No Bad Sector
```

Error Message:

The system will detect the reason and number of error.

```
Fail 0:47
Bad Sector R0 W1
```

3. Notice before Copy

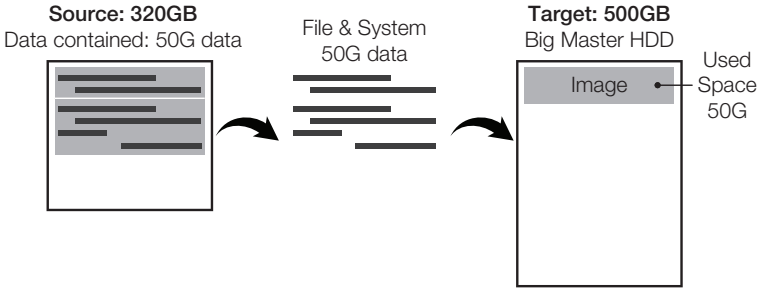
Before copying, please pay attention to the following setting and notice before start backup.

1 Set copying area of HDD:

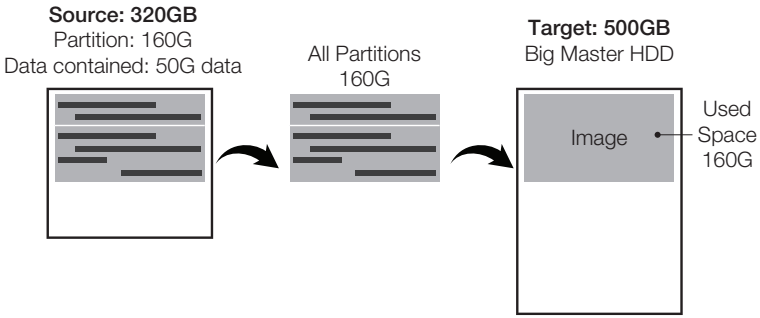
The copying area setting will relate to space needed in big master HDD. Selecting appropriate area can have better efficiency in duplication time and save HDD storage space..

There are four copying method for your selection:
① System and Files, ② All Partition, ③ Whole HDD and ④ Percentage.

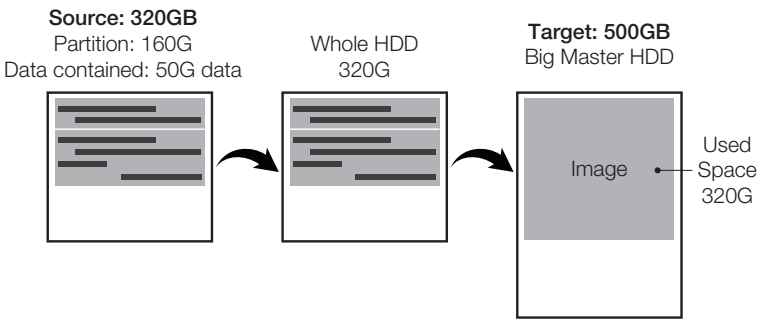
① System and Files (Support FAT16/32/64, ext2/3/4, NTFS, HFX, HFS, HFS+)



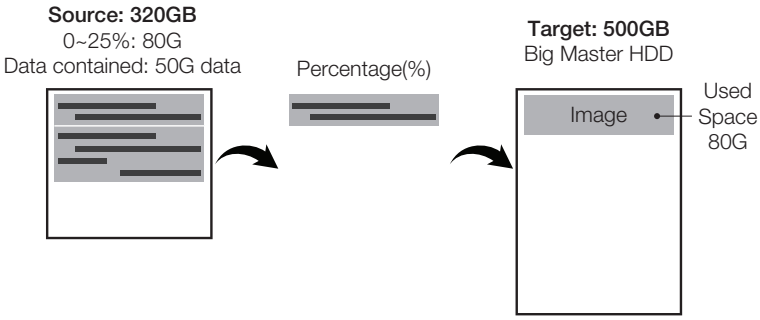
② All Partition (Support all format)



③ Whole HDD (Support all format)



④ Percentage (%)



2 Format Big master HDD: For the first time to assign a HDD as a BIG MASTER HDD, you need to format it by Goblin first.

⦿ Make sure the hard disk has no important file. Use function 4.Image Manager >> 5.Format HDD #2 to create BIG MASTER HDD format.

3 Rename and Delete Image: If you want to rename or delete the image file, please go to the function table 4.Image Manager.

① 4.Image Manager >> 3.Rename Image: Use "△/▽" to select words up to 8 characters. Press "○" to complete edition.

② 4.Image Manager >> 4.Delete Image: Use "△/▽" to select image and press "○" to delete image files.

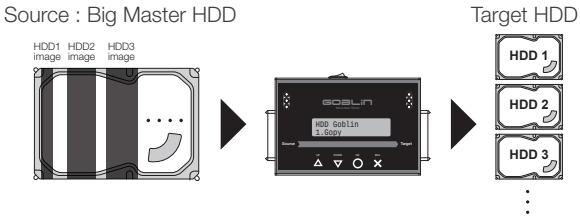
* When using Image Manager, the BIG MASTER HDD needs to be connected to the target side.

Notice

- *The Goblin Big master HDD is a special format which cannot be identified by PC.*
- *The Goblin Big master HDD can save up to 100 HDD images as long as the space is enough.*
- *Please check your Goblin model specification and make sure the maximum supported HDD capacity.*

Chapter 3.
How to Restore Image to Original HDD?

Connect Goblin Big Master HDD into source port; connect empty hard disks to be restored to the target port. Press "O" to start to restore.



1 Select function table 1.Copy >> 2.Image->HDD. Press "O" and start to copy from source image disk to target disk.

```
[Copy]
2.Image -> HDD
```

2 Once duplication is finished, the result of copying task will be shown on LCD.

```
Copy        2442M
 0:38 100% 2442M
```

```
A001 -> HDD
   Complete !
```

Notice
The target HDD will be covered by new data, make sure the HDD does not contain any important data.

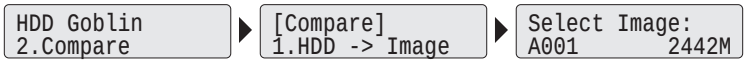
Chapter 4.
How to Confirm Accuracy?

1. Check the copy accuracy by compare

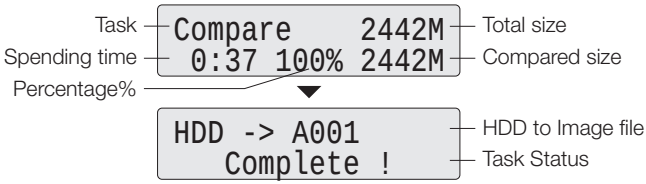
This function will bit-for-bit compare source disks with target disks to ensure the copied disks are identical to source disks.

1 Insert source disks into source port and target disks into target port.

2 Using "△" and "▽" to select function table 2.Compare >> sub-item. Press "○" to start to compare between source and target hard disks.



3 The system will detect the source and target disks automatically. After detecting, the system will start to compare and show the result on LCD.

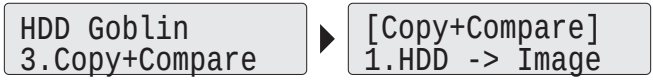


2. Copy & Compare in One Step

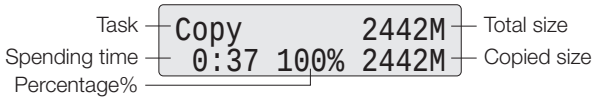
This function will copy first and automatically compare srart once the copying process has been finished.

1 Insert source disks into source port and target disks into target port.

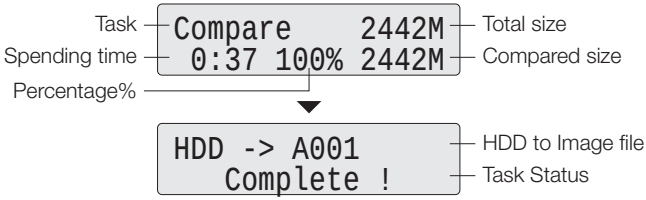
2 Using "△" and "▽" to select function table 3.Copy+Compare >> sub-item. Press "○" to start to copy and compare between source and target in one step.



3 The system will detect the source and target disks automatically. After detecting, the system will copy first. Once copying task is started, the copy progress will be shown on LCD.



4 Then, comparing process will be shown on LCD. When both tasks are all finished, the system will show the result on LCD.

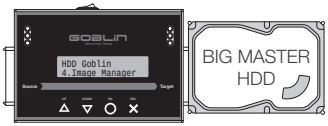


Chapter 5.
How to Manage Image HDDs

This function will manage Image HDDs into target port. There are 5 modes to choose, ① Show HDD info., ② Show Image files, ③ Rename Image files, ④ Delete Image file and ⑤ Format target HDD.

Notice

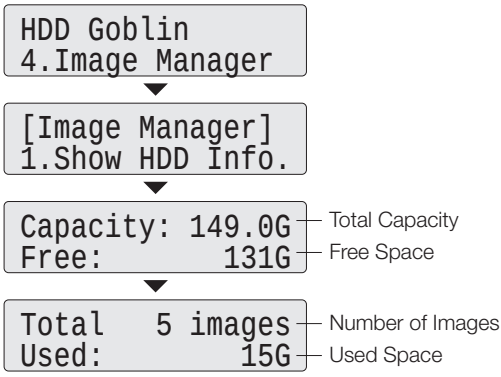
When using Image Manager, the BIG MASTER HDD needs to be connected to the target port.



1. System HDD Info.

This function will check basic information for target HDD #2

Select function table 4.Image Manager >> 1.Show HDD Info. and press "○" to show HDDs information. Press "▽" key to check more related information such as capacity, free and used space, etc.



2. Show Image Info.

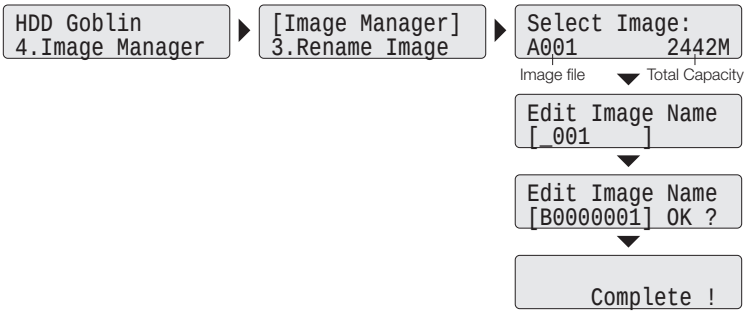
This function enables to check information of Image files in Big Master HDD.

Select function table 4.Image Manager >> 2.Show Image Info. and press "○" to check information such as image names, used amount, etc.

3. Rename Image

This function enables to change Images names of target hard disks up to 8 characters at most.

Select function table 4.Image Manager >> 3.Rename Image and press "○", using "△/▽" to select files name to edit. Use "△/▽" again to select words up to 8 characters. Press "○" to complete edition.



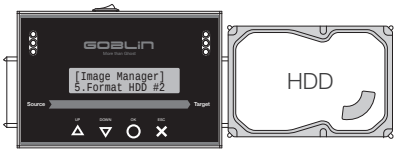
4. Delete Image

This function enables to delete Image files saved in BIG MASTER HDD.

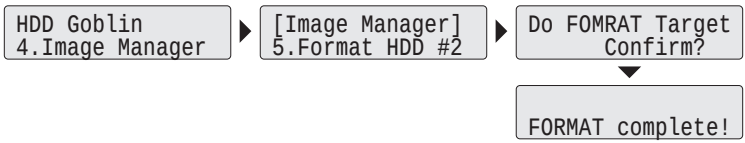
Select function table 4.Image Manager >> 4.Delete Image. Use "△/▽" to select image files and press "○" to delete image files.

5. Format HDD #2

Insert one HDD into the target port. Make sure the HDD has no important data inside.



Select function table 4.Image Manager >> 5.Format HDD #2 to create the BIG MASTER HDD format. Press "○" to check information such as image names, used amount, etc.



Notice

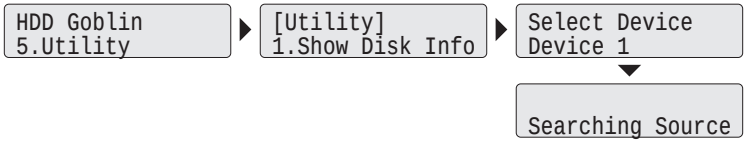
- *For the first time to use a HDD as a BIG MASTER HDD, you need to format it by Goblin firstly.*
- *If Goblin shows Red light with error message "Target Hard Disc is not formatted" while select 1.copy, please double check if you are using BIG MASTER HDD or if you have done the formatting before usage.*

Chapter 6.
Utility Function

1. Show Disk Info

The function will show basic information of both source and target HDDs. There are 9 items to choose ① Model Number, ② Version of Firmware, ③ Serial Number, ④ Device Power Cycle, ⑤ Power-on Hours, ⑥ Reallocation Event Count, ⑦ Off-Line Scan Uncorrectable Sector Count, ⑧ Seek Error Rate and ⑨ Temperature.

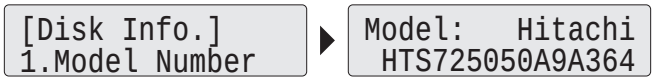
1 Select function table 5.Utility >> 1.Show Disk Info. and press "○" to enter and press "△" and "▽" to select source or target HDD to view its detail information.



2 Using "△" and "▽" key to view information of source or target HDDs.

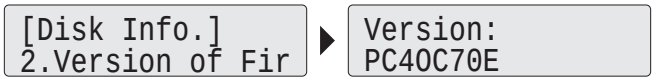
1-1. Model Number

This function is to show model number of connected HDDs.



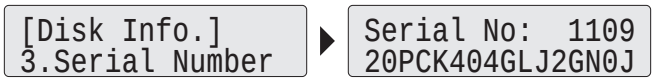
1-2. Version of Firmware

This function is to show firmware version of connected HDD.



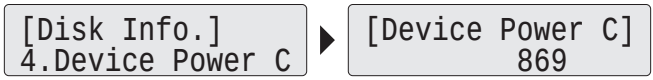
1-3. Serial Number

This function is to show the serial number of connected HDD.



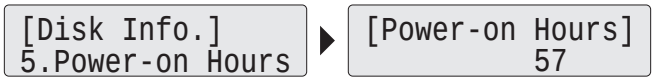
1-4. Device Power Cycle

This function is to show the count of power cycle of connected HDD.



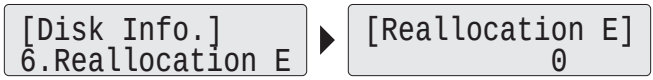
1-5. Power-on Hours

This function is to show the total power-on hours of HDD operation.



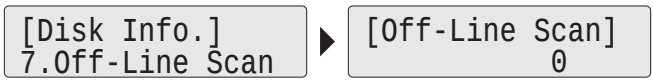
1-6. Reallocation Event Count

This function is to show the count of reallocating event of connected HDD. When the HDD fails to save data, it will need to redefine the location to store data. Therefore, more count of reallocation event represents more error occurring times.



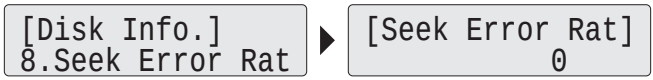
1-7. Off-Line Scan Uncorrectable Sector Count

This function is to show the sector volume of connected HDD that is uncorrectable when scanned off-line. The more the uncorrectable sector volume is, the more serious the damage of HDD is.



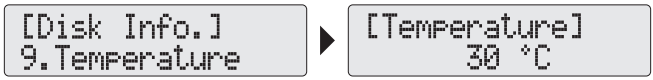
1-8. Seek Error Rate

This function is to show the error rate of searching for data. It can represent the damage rate of data stored in connected HDD.



1-9. Temperature

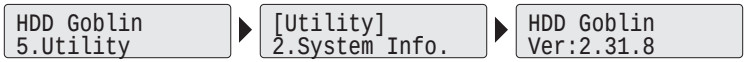
This function is to show the temperature of connected HDD.



2. System Info.

The function will show Goblin system information. There are 4 items to show its information ① System version, ② System number, ③ Build number, ④ FPGA number.

Select function table 5.Utility >> 2.System Info. Press "○" to enter and press "△" and "▽" to view more Goblin system information.



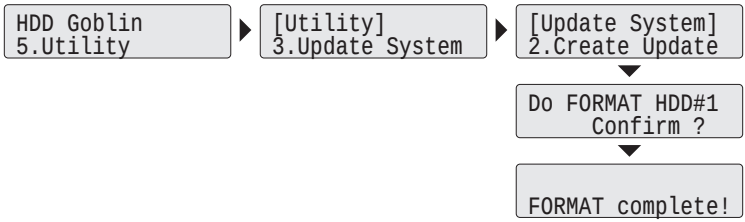
3. System Update

This function enables to update the system BIOS/Firmware through BIOS HDD.

Step 1: Create Update HDD

The function is to create BIOS update HDD (a 2GB FAT partition) first before updating system firmware.

Select function table 5.Utility >> 3.Update System >> 2.Create Update HDD >> Do FORMAT HDD#1 and press "O".



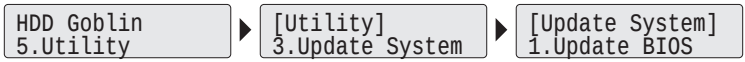
Notice

The purpose of creating a 2GB FAT partition is because 2GB FAT HDD partition can speed up the update process.

Step 2: Update BIOS

Download the BIOS from the PC and save to BIOS HDD. Plug the HDD into source port of Goblin.

1 Select function table 5.Utility >> 3.Update System >> 1.Update BIOS.



2 Press "O" key to start update process. The system will detect update file in the root directory to complete system update. After completed, the system will be restarted. Wait for about 1 minute to finish the update process.

Notice

- *During update process, please do NOT turn off the power or operate other steps at the same time, otherwise it will damage the system permanently.*
- *While the system shows "Searching BIOS" and stops, please check whether update HDD is attached to the source port or correct BIOS being used.*
- *Please make sure BIOS unzipped.*
- *Please make sure BIOS saved in the root directory instead of any new created folder.*
- *If BIOS or format of HDDs error, the system will show "No Update File!" Please format HDD in the source port and download latest firmware from PC.*

Chapter 7.
Setup Function

1. Set Copying Area of HDD

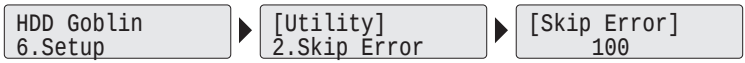
This function is to select coping mode you would like to use.
Appropriate copying area selected can greatly reduce operation time and have better efficiency.

Select function table 6.Setup >> 1.Copy Area and press "O" to enter the settings.

2. Skip Error

Set the volume of errors that is acceptable to skip during the copying process. If it is very critical for content correctness, it is strongly recommended to keep the Skip Error as 0.

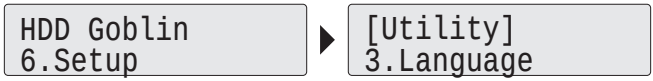
Select function table 6.Setup >> 2.Skip Error and press "O". Adjust the volume to skip from 0 to unlimited by using "△" and "▽" key.



3. Language Choice

This function enables to select preferred language interface to view.

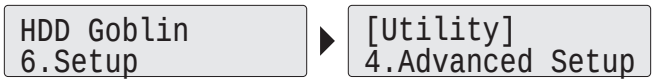
Select function table 6. Setup >> 3. Language and press "O" to select language interface..



4. Advanced Setup Function

The function is used to select advanced settings for unknown format and stop motor time.

1 Select function table 6.Setup >> 4.Advanced Setup.

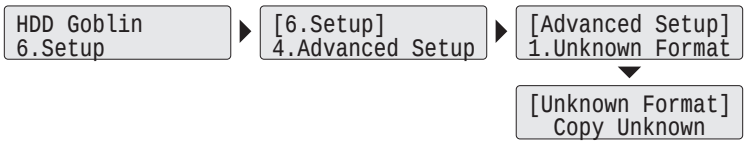


2 Press "O" to start update process.

4-1. Copy or Skip Unknown Format

This function is used to select if copying the areas with unknown format. Set whether copy or skip all the unknown area even if the format is not identified.

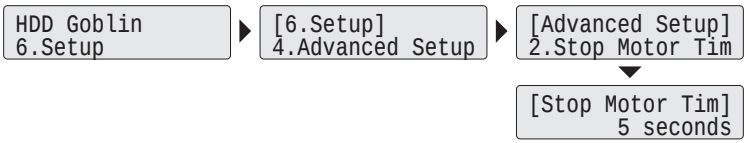
Select function table 6.Setup >> 4.Advanced Setup and press "O" to enter selection. Press "O" again to choose to Copy Unknown during copying unknown formatted area. Otherwise, press "▽" once and select to Skip Unknown during duplication.



4-2. Stop Motor Time

When the system finishes execution, the motor won't stop running immediately. The function is used to set the time of motor stopping after finishing.

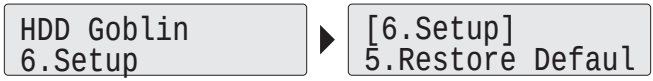
Select function table 6.Setup >> 4.Advanced Setup and press "O" to enter selection. Use "▽" to select 2.Stop Motor Time; press "O" and use "△" and "▽" key to adjust seconds from 0 to 20 seconds. Press "O" to confirm the seconds. The default parameter of waiting time is 5 seconds.



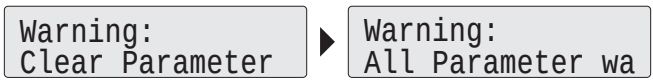
5. Restore to Default Setting

The function is to go back to the manufacturer's default setting, once when you confirm to clear.

1 Select function table 6.Setup >> 5.Restore Default.



2 Press "O" to enter clearing process. Press "O" again to confirm restore; Press "X" to cancel. All parameter will be set to default after pressing "O" button at the first warning message.



Appensdix A. FAQ

Error Message	Possible Reasons	Troubleshooting
HDD Too Small!	Big Master HDD has no enough space.	Go to function 4.Image Manger >> 2.Show Image Info. to check HDD capacity.
Target Hard Disc is not formatted	1. You have formatted before. 2. Check if you are using Big Master HDD.	Go to function 4.Image Manger >> 5.Format HDD #2 to format Big Master HDD.
Warning: No Device Exist	Source or Target HDDs cannot be found, not well connected or wrong format.	Check the format or connect it again. Go to function 4.Image Manager >> 1.Show HDD Info. Go to function to format if necessary, 4.Image Manger >> 5.Format HDD #2, and make sure to connect into target.
Warning: Bad Target HDD	Target HDD cannot be found, not well connected or wrong format.	Check if the target HDD well connected or if it needs to be formatted. Go to function to check its information, 4.Image Manager >> 1.Show HDD Info.
No Update File!	The system cannot find correct BIOS HDD.	Create one BIOS HDD. Download BIOS from PC to HDD. Go to function 5.Utility >> 3.Update System >> 1.Update BIOS to update system by that HDD.

Q&A	
What is the compression of Goblin image file?	Goblin does not do compression when transfer source HDD as an image file into the big master HDD. The contained data size will depends on the copy area you select and save the exactly data capacity on the big master.
What is the maximum HDD capacity that Goblin can support?	For model HS268, it can support up to 32TB HDD (including Raid HDD). For model LS120, It can support up to 4TB. Please check your model number.

Appendix B. Specification

Product Name		Carry Goblin HDD Image Backup Marker	
Product Number		LS120	HS268
Source to Target duplication		1 to 1, HDD to Image, Image to HDD, HDD to HDD	
Compatible HDD		SATA/IDE/mSATA/eSATA/SDD/iVDR/Raid HDD	
Transfer Speed		7.2GB/min	16GB/min
Source		HDDs	
Duplication Mode		Quick Copy (System and Files of all format)	
		All Partition	
		Whole HDD	
		Percentage	
Support Format of System and Files		Linux (ext2, ext3, ext4), Windows(NTFS, FAT16, FAT32, FAT64) Mac OS(HFS, HFS+, HFSX)	
		4TB	32TB
Display		Monochrome LCD	
Control Button		4 Push buttons(△ UP, ▽ DOWN, ○ OK, × ESC)	
Language for English device		English, Japanese	
Temperature	Storage	5℃~45℃	
	Working	-20℃~85℃	
Humidity	Storage	20%~80%	
	Working	5%~95%	
Power Supply		100V~240V	
Safety/ Certificate		FCC, CE, RoHS	

• The actual specification may subject to change without notice.