



Operation Manual

BoxWriter Automated Disc Duplicator

Model #: BW7220 (Standalone)

Serial Number: _____

(The serial number is labeled on the rear panel of the device.)

PREFACE

Important Safety Instructions

For your safety, basic precautions should always be followed to reduce risk of damage, electric shock, fire, and personal injury. This includes the followings:

- Read this manual carefully and follow all warnings and instructions.
- Operate the unit with only the proper electrical specifications as labeled on the device. Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole grounding receptacles that accept your device's plug. Make sure the device is connected to a known ground.
- Do not expose this unit to direct sunlight, rain, moisture, water, flammable material, gas, dust, dirt, smoke, pollution or abrupt humidity changes.
- Place this device on a steady level surface in an air-conditioned environment with sufficient ventilation. Do not move this device while the power is on. Handle with care.
- This device generates heat during the duplication process. Out-of-specification or unstable power supply may cause overheating, low productivity, increased failure rate, and damage the device.
- Use a reliable power source with a correct voltage and ample current supply. Give this device a dedicated power outlet. Do not share the outlet with other devices.
- Please make it a habit to always unplug the power cord before troubleshooting or performing maintenance. Always turn the power switch to the Off position when connecting the power cord.
- Do not attempt to disassemble this device or touch any of the moving parts. Refer servicing to qualified service personnel. Unauthorized disassembly or repair will void all warranty.

Acknowledgments

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brands, and trademarks are the property of their respective owners.

FCC Compliance: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician.

Use of shielded cables is required to comply with the Class A limits of Part 15 of the FCC Rules. You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate and/or obtain warranty service for this equipment.

Limited Warranty (North America): The information contained in this document is subject to change without notice. Datatronics Technology Inc. makes no warranty of any kind with respect to this information.

Datatronics Technology Inc. guarantees this device for a period of one year from the date of delivery, free from defects in material and workmanship. In case of malfunction or fault, Datatronics Technology Inc. will, at its option, repair or replace the product.

You must return the defective product, protected in the original packaging, with a valid RMA number, to an authorized dealer or reseller within the warranty period accompanied with the proof of purchase.

This warranty only covers parts made by Datatronics Technology Inc. For parts made by other manufacturers, such as hard disks, and disc recorders, the original manufacturer's warranty applies.

This warranty will not cover abuse, misuse, alteration, modification, tampering, negligence, faulty installation, accidents, lack of reasonable care, unauthorized repairs or service, or if installed to any device not provided with the product, or if the serial number label provided with this product has been broken or removed.

This warranty does not cover damages that occur in shipment, due to acts of God. All repairs and replacement services shall only be handled by Datatronics Technology Inc, and by authorized service centers. Parts used for replacement are covered only for the remainder of the warranty period.

Datatronics Technology Inc. disclaims all implied warranties on this product, including without limitation warranties of merchantability, performance, and fitness for a particular purpose.

In no event will Datatronics Technology Inc. be liable for direct, indirect, special, incidental, tort, economic, contingent or consequential damages resulting from any defect in this product or its documentation, including, without, limitation, damages or costs relating to the loss of data, profits, business or goodwill, even if Datatronics Technology Inc., its authorized dealers or resellers have advertised the possibilities of such damages. In no case shall Datatronics Technology Inc.'s liability exceed the amount paid by the user of this product out of which such claim arose.

Any written or oral information or advice given by the dealer, reseller, agent, sales representative, or employee of Datatronics Technology Inc. will in no way increase the scope of this warranty nor should you rely on such oral or written communication.

Technical Support: For technical support and assistance, please contact your local dealer.

For additional information regarding optical disc duplication, printing, and management please visit our website. We value your comments and suggestions and thank you for your purchase.

Datatronics Technology, Inc.
<http://www.datatronics.com.tw>

TABLE OF CONTENTS

Preface	2
Unpacking your BoxWriter	6
Package Contents.....	6
Getting Familiar with BoxWriter	8
Block Diagram.....	8
A Look at BoxWriter	8
Rear View.....	9
LED Indicators	10
Hardware Installation	11
Finding a Place for BoxWriter	11
BoxWriter Installation	11
Before Getting Started	12
Tips for Handling Optical Discs.....	12
What You Need to Start a Disc Duplication Session.....	12
Important Tips for Loading Discs to BoxWriter	12
Automated Multiple-Master-Disc Duplication.....	12
Write Speed: Production Rate vs. Duplication Quality.....	13
Duplicate Disc Verification	13
Handling Disc Write Failures.....	13
Reject Disc Output	14
Finish Disc Bin is Full or Out-of-Position	15
Turning BoxWriter On	15
Turning BoxWriter Off	15
Operation Quick Guide	16
Abort a Running Operation	16
Start a Duplication Session.....	16
Duplication Simulation	17
Erase a Stack of Rewritable Discs.....	17
Verify a Stack of Discs	18
Specifications	19
Appendix	20
BoxWriter Maintenance.....	20
Choosing Reliable Blank Discs.....	20
Disc Separation.....	20
The Quality of the Master Disc Counts	20
Writing Speed.....	21
Frequently Asked Questions	22

UNPACKING YOUR BOXWRITER

Congratulations on purchasing the BoxWriter BW7220 (Standalone) Automated Disc Duplicator. BoxWriter is a state-of-the-art, automated, optical disc duplicator, which does not require a PC connection to operate. It is an integrated system with built-in dual optical disc recorders, a hard disk and auto-loaders. The embedded controller and built-in hard disk provide an extremely reliable automated, standalone, duplication solution.

BoxWriter, with an 80 disc capacity and dual recorders, outputs at twice the rate of single recorder duplication units. A lockable cabinet protects discs from dust and unauthorized access. It can also detect failed discs and separate them from a duplication session. Depending on the configuration of your device during purchase, it may come with CD/DVD (BW7220) or Blu-ray recorders (BW7220-BR).

Getting BoxWriter up and running is simple. The control panel with LED indicators and operation buttons takes minutes to learn. Simply connect the power cord, turn the power switch to the On position, load the master and blank discs into the disc loader, and press the desired duplication speed button.

Please read this manual carefully before using BoxWriter. This user guide contains all the information on its operation and maintenance. For additional information regarding optical disc duplication, printing, and management please visit our website. We value your comments and suggestions and thank you for your purchase.

Package Contents

Before opening the package, carefully inspect for any damage. If there is any sign of damage, contact the shipping company and your local dealer immediately.

Save the packing materials in case you need to ship or return your product. The original packaging will ensure the product is protected during transportation. Returning goods without the original packaging may not protect the product during transportation, and will void your warranty.

Once you have removed all the parts included with your package please check to see if any pieces are missing or damaged. If any part is missing or damaged, contact your local dealer immediately.

The items listed below should be included in the package:

- One BoxWriter BW7220 Automated Disc Duplicator
- One power cord
- One power adapter
- One operation manual

GETTING FAMILIAR WITH BOXWRITER

Block Diagram

BoxWriter BW7220 is an integrated system with two built-in optical disc drives, and auto-loaders. See the illustration below.

Depending on the configuration of your purchase, your BoxWriter may come with one of the following optical disc recorders:

- BoxWriter BW7220: CD/DVD recorder
- BoxWriter BW7220-BR: Blu-ray/CD/DVD recorder

A Look at BoxWriter

- **LED Indicators & Operation Buttons**

Located on the top right of BoxWriter, the control panel contains the LED indicators and operation buttons.

- **Disc Storage**

This lockable cabinet secures blank discs. Turn the key to unlock and lift to open. The lock also secures the Finish Disc Bin.

- **Reject Disc Tray**

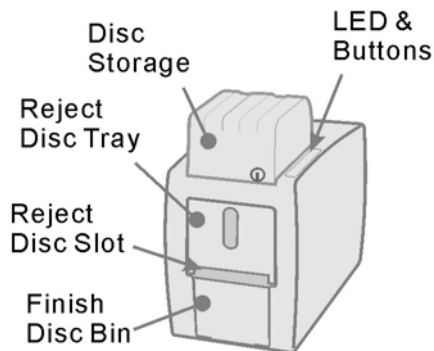
The Reject Disc Tray, with a three disc capacity, receives the rejected discs. Pull down to open.

- **Reject Disc Slot**

The slot where rejected discs will be discarded when the reject tray is in its closed position.

- **Finish Disc Bin**

This is the bin where completed discs are stored. Be sure to unlock the Disc Storage before removing the Finish Disc Bin. The Finish Disc Bin must be in position during operation.

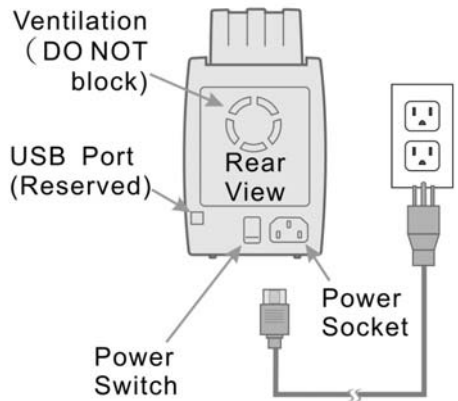


Important:

The Finish Disc Bin must be in position during operation. Removing the Finish Disc Bin will stop BoxWriter from operating immediately after the current disc being written to has completed.

Rear View

- **USB Port**
Connects BoxWriter to the host PC.
- **Power Socket**
Use the provided power cord to connect BoxWriter to a wall outlet.
- **Power Switch**
Turn BoxWriter on and off.
- **Ventilation**
This allows heat to escape. Do not block this otherwise the unit may overheat.



Control Panel

- **High-Speed Duplication**
Press to start the duplication process at the highest possible write speed to produce discs at the maximum production rate.
- **Safe-Speed Duplication**
Press to start normal speed duplication. This increases quality but decreases output rate. Recommended for audio and video discs.
- **Function Key**
Press this button to activate or deactivate disc verification during the duplication process.
- **Test/Abort**
Press to abort the current duplication process or to start a duplication simulation.



Important:

The High-Speed Duplication mode will use the maximum recorder speed but may be limited by the write speed of the disc

LED Indicators

BoxWriter's status is reflected by the LED indicators on the control panel. The table below describes the meanings of the LED indicators.

H	S	F	T	Description
●	●	●	●	The power switch is in the Off position
⇒	⇒	⇒	⇒	Device Initialization
●	●	●	○	Ready Mode
◎	●	●	○	High-Speed Duplication
●	◎	●	○	Safe-Speed Duplication
◎	●	○	○	High-Speed Duplication with Disc Verification
●	◎	○	○	Safe-Speed Duplication with Disc Verification
●	●	◎	○	Disc Verification in progress
⇒	⇒	⇒	○	Erasing rewritable disc
◎	◎	◎	○	Finish Disc Bin is Full
◎	◎	○	○	Finish Disc Bin is out-of-position
●	●	●	◎	Error Encountered
●	●	○	●	Function Key Enabled

○: Lit

●: Off

◎: Flash

⇒: Running

HARDWARE INSTALLATION

Finding a Place for BoxWriter

BoxWriter should be placed on a fairly level surface, firm enough to support the unit and discs. Always allow ample workspace for your operation, with easy access to the blank and finished discs.

Do not expose the unit to direct sunlight or high humidity, as it may cause the unit to malfunction.

BoxWriter Installation

Follow the steps below to complete BoxWriter's hardware installation:

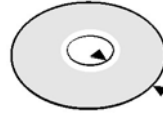
- 1) Place BoxWriter on a level surface.
- 2) Use the power cord that came with the unit to connect BoxWriter to a wall outlet with a reliable power supply.

You have now successfully completed BoxWriter's hardware installation.

BEFORE GETTING STARTED

Tips for Handling Optical Discs

Never touch the printable or data surface of the disc, as it may decrease quality and disc lifespan. Refer to the arrows on the illustration to the right, Always handle discs from the outer edge or the center hole.



What You Need to Start a Disc Duplication Session

The BoxWriter BW7220 is a standalone duplicator, which does not require a computer connection. You will need the following to start a duplication session:

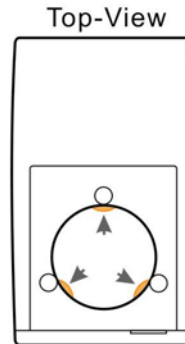
- **Master Discs**
The original disc providing the source of data for a duplication session.
- **Blank Discs**
The disc that BoxWriter will write the source data to during a duplication session.

Important Tips for Loading Discs to BoxWriter

When the disc loader is empty, do not attempt to load many discs at once.

First, carefully load only one disc into the disc loader and assure it is firmly resting on the three wheels seen in the illustration to the right. You may then gradually load additional discs on top of the first disc, until the loader is full.

BoxWriter processes discs in a First In, First Out (FIFO) sequence. During a duplication session, if a disc refill is required, before the loader becomes empty, gently load additional discs.



Automated Multiple-Master-Disc Duplication

BoxWriter not only performs one-to-multiple, but also multiple-to-multiple disc duplication. Whenever BoxWriter detects a non-blank disc in a recorder, a disc image will be written to the built-in hard disk. The disc image is then used to duplicate all the following blank discs, until another master disc is detected or the loader becomes empty.

When another non-blank disc is detected, a new disc image will be written to the built-in hard disk. The previously stored image will be overwritten and the new image will be used for disc duplication.

Do not use rewritable discs as a master disc, since BoxWriter is designed to always erase rewritable discs before attempting to write data to them.

Write Speed: Production Rate vs. Duplication Quality

By pressing the appropriate button, BoxWriter can perform High-Speed and Safe-Speed Duplication accordingly. High-Speed Duplication writes to discs at the highest possible speed according to the recorder and blank disc characteristics.

Although High-Speed Duplication takes less time to write to a disc, and produces more discs per hour than Safe-Speed Duplication, a higher failure rate may be encountered, especially when the blank disc quality is not good.

Most users choose High-Speed Duplication, while professional users prefer Safe-Speed to duplicate audio and video discs, for improved duplicate disc quality.

When duplicate disc quality is critical, activate the Verify Disc mode to have BoxWriter read and verify each duplicate disc with the source image immediately after the disc is duplicated.

Duplicate Disc Verification

BoxWriter is not only able to verify each duplicate disc with the source disc image during a duplication cycle, it can batch verify a stack of discs with a master disc. Duplicate disc verification involves reading and comparing the duplicate disc image with the master disc image on the hard disk.

Disc verification is performed according to the disc data format. For data disc verification, both the read and comparison process will be performed. However, due to the limitation of industry standards, for audio disc verification it will only perform the reading check, and not the comparison process.

Handling Disc Write Failures

Some discs may be defective and fail during a write session. A failed disc will be sent to the Reject Disc Tray when it is open, or discarded to the Reject Disc Slot when the Reject Disc Tray is closed.

To avoid excessive disc failure, BoxWriter is designed with the following rules when disc failure is encountered:

- In a normal duplication session with dual recorders in operation, if a recorder continuously fails to write to three discs in sequence, this recorder will be deactivated and BoxWriter will use the other recorder to continue the job until the disc loader is empty.
- In a single-recorder duplication session, if the recorder continuously fails to write to three discs in sequence, BoxWriter will halt the active duplication session and the LED indicator status will show an error.
- In a single duplication session if a total of ten failures accumulate, BoxWriter will stop the active duplication session and the LED indicator status will show an error.

To resume operation from an error, carefully check for and resolve any noticeable problems, press the button for the desired duplication speed to resume the session.

Important:

In case that BoxWriter has been turned off, always wait for 30 seconds before turning it back on. Then, reload the master and blank discs and press the appropriate button to start a new job.

Reject Disc Output

BoxWriter is equipped with a Reject Disc Tray and a Reject Disc Slot on the front side of the unit. Only one of them can be used to handle rejected discs depending on whether the Reject Disc Tray is open or not.

To open the Reject Disc Tray, simply pull down the top of the tray away from the BoxWriter unit and lay it downward as shown in the illustration to the right.



When the Reject Disc Tray is open as shown, rejected discs will be sent to this tray. The tray will hold up to three discs. Once the tray is full, the overflow discs will be pushed off the tray. The use of a container is suggested to collect the overflow discs.

In case the Reject Disc Tray is closed, rejected discs will be discarded through the Reject Disc Slot. You may place a container in front of the Reject Disc Slot to receive possible rejected discs.

Finish Disc Bin is Full or Out-of-Position

Once the Finish Disc Bin is full, BoxWriter will immediately pause the duplication session including any disc in the process of unloading. The LED indicator status will show an error. To resume the session, clear the Finish Disc Bin, return it to position and press any key.

Turning BoxWriter On

Follow the steps below to get your BoxWriter ready:

- 1) Connect the power cord to BoxWriter and a wall outlet.
- 2) Turn the power switch to the On position.

BoxWriter will enter the initialization process and will remove any discs inside the optical recorders. During initialization, the LED indicators will run in sequence. Please be patient until the initialization process has completed.

When initialization is complete, you will see the Test/Abort indicator light up signaling that BoxWriter is ready to start a duplication session. To turn BoxWriter off, turn the power switch to the Off position. In case there is a duplication session underway, abort or wait until it has completed.



Important:

The Finish Disc Bin must be in position during operation. Removing the Finish Disc Bin will stop BoxWriter from operating immediately after the active disc has completed writing.

Turning BoxWriter Off

To turn BoxWriter off, turn the power switch to the Off position. In case there is a session underway, abort or wait until it has completed.

Although it is fine to leave the power cord plugged in, it is recommended that you unplug the cord for increased safety when BoxWriter is not used for extended periods of time.

OPERATION QUICK GUIDE

Abort a Running Operation

To abort a duplication session, press the Test/Abort button. If the recorder is currently writing to disc, BoxWriter is designed to abort the duplication session after the recorder has completed writing to disc.



Test/Abort

Important:

Turning the power switch to the Off position will immediately terminate the active duplication session, damaging any disc in the process of being written to. Only turn off the power in case of emergency.

Start a Duplication Session

High-Speed Duplication produces more discs per hour, yet Safe-Speed better assures duplicate disc quality especially for audio and video discs.

Follow the steps below to start a one-to-multiple disc duplication session:

- 1) Load the master disc into the disc loader.
- 2) Load the desired quantity of blank discs on top of the master into the disc loader.
- 3) Press either the High or Safe-Speed Duplication button to start. BoxWriter will run the operation until the disc loader is empty.



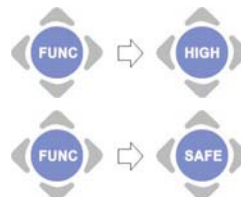
High Speed Duplication



Safe Speed Duplication

Important:

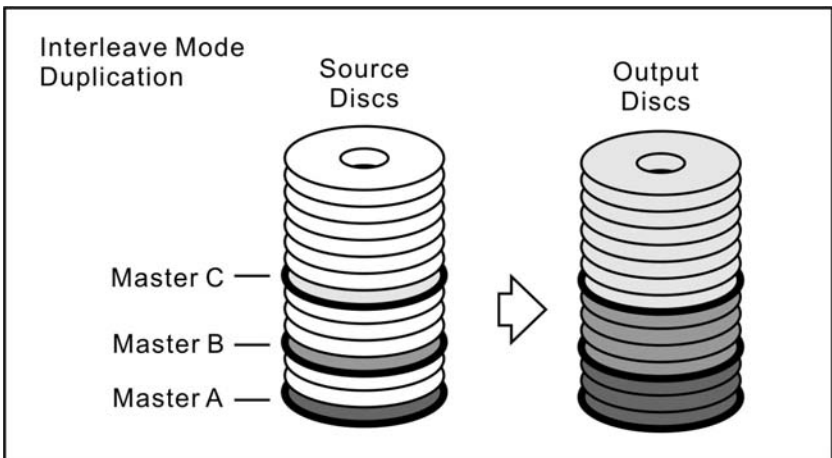
In duplication mode whenever a rewritable disc is detected, BoxWriter is designed to always erase the disc. Do not use rewritable discs as master discs because the data on the disc will be erased.



Important:

To verify your written data, press the Function Key which will light up its LED and then press the High or Safe-Speed Duplication button to start.

If using multiple master discs to produce different quantities of duplicate discs, repeat steps 1 and 2 to load additional sets of masters and blank discs. Then, press the High or Safe-Speed Duplication button to start duplicating discs. The illustration below shows an example of three disc sets, stacked in interleave mode with one on top of another, for multiple-to-multiple duplication,



Duplication Simulation

This mode is used to test discs for writing by emulating a duplication session and will not actually write to the discs. Follow the steps below to start a duplication simulation session:

- 1) Load the master disc into the disc loader.
- 2) Load the desired quantity of blank discs on top of the master disc.
- 3) Press the Test/Abort button to start. BoxWriter will run the operation until the disc loader is empty.



Important:

Duplication simulation will not work with DVD+R, DVD+RW and DVD+R DL discs. When a DVD+ disc is detected it will be rejected.

Erase a Stack of Rewritable Discs

This operation erases a stack of rewritable discs for



future use:

- 1) Load the rewritable discs you would like to erase into the disc loader.
- 2) Press the Test/Abort button to start. BoxWriter will erase discs until the disc loader is empty.

Verify a Stack of Discs

This operation verifies a stack of duplicate discs against a master disc. Follow the steps below to start the verification process:

- 1) Load the master disc and the discs you would like to verify.
- 2) Press the Function Key which will light up its LED. Press the Test/Abort button to start.



SPECIFICATIONS

Disc Recorder	Two CD/DVD recorders (BW7220); Two Blu-ray/DVD/CD recorders (BW7220-BR).
Input Capacity:	80 discs (more discs with non-stop refill)
Output Capacity:	80 discs
Reject Disc Capacity:	3 discs (unlimited discs using Reject Disc Slot)
Write Speed:	CD-R: 40X; CD-RW: 32X; DVD±R: 18X; DVD±R Dual: 10X; DVD-RW: 6X; DVD+RW: 8X. Blu-ray: 4X (BW7220-BR).
Operation Method:	Standalone; PC-connection is not required
Control Panel:	High-Speed, Safe-Speed, Function, Test/Abort; with corresponding LED Indicators.
Disc Size:	120 mm in diameter.
Operation Temperature:	42°F to 86°F (6°C to 30°C).
Humidity:	5% to 85%, no condensation.
Certification:	CE and FCC; power adaptor is UL approved.
Dimensions:	9-1/2" x 17" x 17-1/2"; 23.9 x 44.9 x 47.4 cm.
Weight:	22 lb; 10 kg.
Power:	100 to 240VAC; 50 or 60 Hz.

*Specifications are subject to change without notice.

APPENDIX

BoxWriter Maintenance

Periodically cleaning the device will ensure proper performance. Follow the steps below to maintain BoxWriter:

- 3) Turn the power switch to the Off position.
- 4) Remove the master and blank discs.
- 5) Unplug the power cord from the wall outlet.
- 6) Clean the BoxWriter unit using a lint-free cloth moistened with warm water.
- 7) Dry the unit immediately with a dry lint-free cloth.

Choosing Reliable Blank Discs

The quality of a recordable disc depends on its chemical coating technology. There are a variety of discs with various degrees of disc quality available on the market. If you encounter a high failure rate, please try a different type, speed, or brand of disc.

There are many different brands, speeds and CD/DVD recordable media formats on the market. We do our best to test certain media types. It is impossible for us to guarantee that all discs will be compatible.

Please choose a blank disc that is most suitable for your application. You may contact your local dealer for advice on the best suitable blank disc for your system. In addition, we suggest users to test blank discs by using disc simulation before actually writing to discs.

Disc Separation

Certain blank discs may tend to stick to each other or may be difficult to separate. Avoid these types of discs. BoxWriter is equipped with a patent pending disc separator, which handles discs that adhere to each other better than traditional auto-loaders. However, it is strongly recommended that you separate or loosen blank discs from each other before use.

The Quality of the Master Disc Counts

As with blank discs, the quality and the data format of the master disc play a critical role in the duplication process. If you encounter difficulties try Safe-Speed Duplication to increase quality and lower failure rate.

Writing Speed

BoxWriter provides High and Safe-Speed Duplication for your convenience. Note that selecting High-Speed Duplication does not mean the recorder will write at a fixed maximum speed. The system will monitor and automatically adjust the writing speed as the optical laser moves from the inner ring to the outer ring, up to the selected speed. The recorder's maximum speed may never be reached if a lower grade disc is used.

At the maximum speed, for a single recorder, duplicating a 4.7 GB DVD should not take more than 8 minutes. Please check both the quality of the blank and the master disc if the duplication process takes more than 8 minutes for a single disc. Use a reliable master disc for testing purposes. You should also try different specification and brands of blank discs.

You should also check the power supply's voltage and amperes. Insufficient power supply may decrease output rate or increase failure rate.

If you press the Safe-Speed Duplication button, the device's writing speed will be restricted to a lower speed. When creating audio and video discs it is recommended to use Safe-Speed Duplication.

FREQUENTLY ASKED QUESTIONS

Why is my duplication failure rate so high?

- Try a lower writing speed using Safe-Speed Duplication.
- Use a different brand of blank discs.
- Check the power source.

Why do my discs get stuck in the disc loader during the duplication process?

- Check to see if the disc is the standard size (120mm).
- Make sure discs are level in the loader.
- Reduce the quantity of discs per load. Some discs may bend from the weight of the discs placed on top of them.
- Use a different brand of blank discs.

Why won't the power switch work all the time?

- Allow a 30 second interval when switching the power on and off.

Why does the disc loader fail to pick up the disc?

- Check to see if the disc is the standard size (120mm).
- Make sure the discs are not bent or damaged.

Why is the disc unloader dropping two or more discs at a time?

- Check to see if the disc is the standard size (120mm).
- Make sure the discs are level when inserted.
- Separate or loosen the discs from each other before use.
- Use the same brand of discs. Do not mix disc types or brands.
- Reduce the quantity of discs per load. Some discs may bend from the weight of the discs placed on top of them.
- Use a different brand of blank discs.

How can I restart or reset BoxWriter when it is not working properly?

- Turn the power switch to the Off position and back to the On position after waiting 30 seconds. If this does not solve the problem, please contact your dealer or authorized service center.

Datatronics Technology, Inc.
<http://www.datatronics.com.tw>

Version: V106, September, 2008
Part #: 711-7220-1000-3