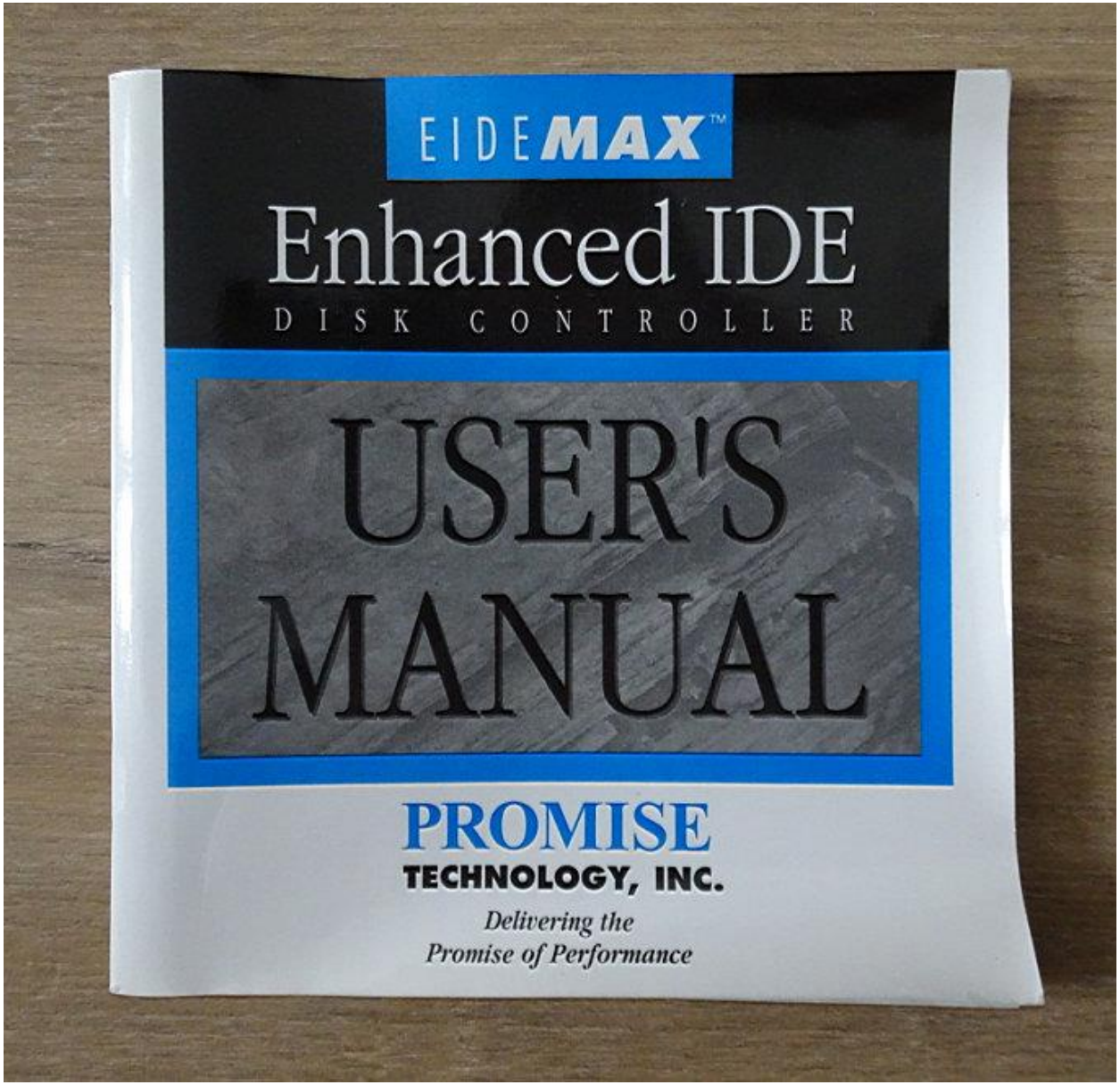
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USER'S MANUAL
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EIDE*MAX*

16-BIT ISA
ENHANCED IDE CONTROLLER

User's Manual

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Technical Support

For faster service, please have the following information available:
1. Product Model & Serial number 2. Description of Problem
3. System Configuration

Technical service is available from the following sources:

24-Hour BBS: 1-408-452-1267
User Settings are: 14,400 baud, 8 data bits, no parity, 1 stop bit

Dial-In Telephone Support: 1-408-452-1180 (8:30am-4:30pm PST)

Fax Support (for questions): 1-408-452-1534
FAX on demand: 1-408-452-9160

Section 1

Major Features

Thank you for purchasing the Promise EIDE*MAX* - the 16-bit ISA-based secondary EIDE controller. With the EIDE*MAX*, you can maximize storage size and speed of most any PC's existing 16-bit ISA-based IDE controller and expand your drive/device options.

1) **Storage Capacity to the *MAX***
You can attach two Enhanced IDE drives (up to 8.4GB each) to your existing controller card and two more to EIDE*MAX*'s own IDE device connector. EIDE*MAX*'s on-board BIOS provides LBA Mode for high capacity drives with storage capacities greater than 528MB without special software drivers.

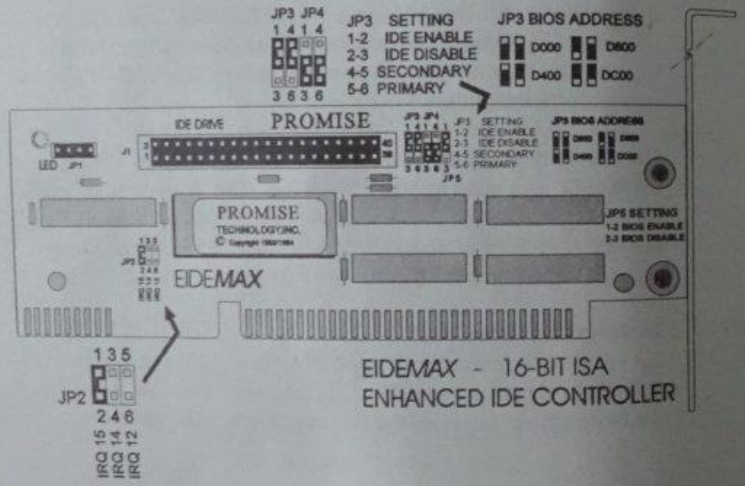
2) **IDE Device Choices to the *MAX***
EIDE*MAX* also supports ATAPI devices. This allows you to attach an IDE CD-ROM or IDE tape backup to EIDE*MAX* (instead of hard drives). And because these devices are IDE, there are no complex settings or terminator plugs to worry about.

3) **Performance to the *MAX***
Boosts the performance of most ISA-based IDE disk controllers. EIDE*MAX* supports multiple sector read/write functions to increase data throughput and response for conventional IDE controllers.

4) **Compatibility to the *MAX***

EIDE*MAX* supports most IDE and Enhanced IDE devices today without added device drivers or complex jumper settings. EIDE*MAX* works with most existing IDE controllers.

Please examine the diagram below of the EIDE*MAX* for connector and jumper block placement. These will be referred to throughout the manual.



Section 2

Configure & Install

Easy three-step installation gets you up and running fast. Prior to installing EIDE*MAX*, please make note of your existing drive sizes, number of cylinders, heads and sectors from your CMOS setup screen. You may be asked to use this information during CMOS Set-up.

Step 1: Configure EIDE*MAX* Jumpers

There are two basic questions to answer:

Question 1: Do you wish to make EIDE*MAX* your only controller or use a hard drive attached to EIDE*MAX* to boot your system?

If the answer is no, skip to Question 2. If yes, see below:

Changing EIDE*MAX* from Secondary Controller to Primary

The Primary device channel controls the hard disk that allows the system to be booted. To make EIDE*MAX* serve as your Primary or only IDE controller, do the following:

A. Remove or disable any existing ISA IDE controller or change the existing controller from Primary to Secondary Channel.

B. Identify jumper block JP3 on the EIDE*MAX*. Move jumpers to cover pins 5-6. Make sure to connect a hard drive to EIDE*MAX* that is bootable.

C. Identify jumper block JP2 on EIDE*MAX*. Move jumpers to cover pins 3-4. This enables device interrupt IRQ14 that is reserved for the primary hard disk controller.

Question 2: Do You Have an Add-In Board With External BIOS?

If you do not have an add-in board with external BIOS, you may proceed to Step 2: Connect IDE Drives and/or Devices. Otherwise, see the following instructions:

Changing External BIOS ROM address

If your system has other boards that occupy reserved memory space such as a network card, you need to make sure there is no BIOS address conflict (using diagnostic software or check manufacturer setting of other boards). The default address of the external BIOS of EIDE*MAX* is D000H. In case of a conflict, you have to change either the ROM address of the conflicting board, or ROM address of EIDE*MAX*.

To change the ROM address of EIDE*MAX*, do the following:

A. **Identify jumper block JP4**
B. **Move the jumpers to cover the described pins:**

Address	Pin Setting
D800H	1-2 + 5-6
D400H	2-3 + 4-5
D000H	2-3 + 5-6 (default)
DC00H	1-2 + 4-5

Step 2: Connecting IDE Drives and/or Devices

Simply plug the EIDE*MAX* controller into any available 16-bit ISA slot in your system. Make sure the card is well-seated in the slot.

Items 1-3 below assume you have an existing ISA IDE controller in your system as the Primary booting controller. If instead you will be using EIDE*MAX* as the Primary controller in your system, follow directions for Item 4 for information on installing drives. Check the following:

1. **Installing Hard Drive(s) to Your Existing Controller**

Promise recommends users connect a second hard drive to their existing controller BEFORE attaching hard drives to EIDE*MAX* . If a second hard drive will be attached to your existing controller, refer to the disk drive's own installation guide to set one as "master" (the drive that will boot the system) and one as "slave."

2. **Installing Hard Drive(s) to EIDEMAX**

If adding a third drive to EIDE*MAX*, it should be set as "master"* drive. If adding two drives to EIDE*MAX*, set one as "master" and the other as "slave." Consult drive manufacturer's installation guide. No other software needs to be installed in order for EIDE*MAX* to support these drives.

* NOTE: Some Drives use "Single" when only one Drive is used. Refer to your Drive's instructions to determine what it requires.

WARNING!: If you are using a high capacity disk drive on your existing controller that is physically greater than 528MB but is formatted as 528MB or less, use this drive on your existing Primary controller only. DO NOT CONNECT SUCH A FORMATTED DRIVE TO EIDE*MAX* SERVING AS THE SECONDARY CONTROLLER OR YOU MAY LOSE DATA.

3. **Installing an IDE CD-ROM or IDE Tape Backup**

You may install either an IDE CD-ROM or IDE tape backup device on EIDE*MAX*. These IDE devices MUST support the IDE ATAPI interface. When such an IDE device is used, it must use the device manufacturer's supplied software drivers. Refer to your IDE device manual to obtain instructions on correctly installing software drivers.

NOTE: We strongly recommend you to attach your IDE CD-ROM or tape backup devices **ONLY** on the **Secondary** controller. Installing IDE CD-ROM or Tape backup on the Primary controller might encounter 32-bit access problem in certain operating systems. Detailed information can be seen on Section 3, Advanced Issues.

4. **Attach the LED connector if EIDE*MAX* is the only controller**

NOTE: If EIDE*MAX* is your only controller, remember to attach the system's LED connector to JP1. This will allow the disk activity indicator LED to work properly.

Step 3: Perform System CMOS setup

System CMOS Setup options refer only to the first and second drives connected to the Primary IDE Channel. Promise's on-board BIOS will auto-recognize drives connected to the Secondary IDE Channel.

There are four options to consider with the system CMOS setup when connecting your Hard Drives to the Primary IDE Channel:

Option 1: When Using an Existing Hard Drive Less Than 528MB

Use the original drive settings in CMOS Setup. If moving this drive(s) to EIDE*MAX* as the Secondary controller (3rd or 4th drive), no special settings are required. EIDE*MAX* will auto-recognize this drive type.

Option 2: When Using an Existing Hard Drive Physically Greater Than 528MB But Formatted at 528MB or Less

If the user wishes to keep the same formatting of the drive, use the original drive settings in CMOS. INSTALL SUCH A FORMATTED DRIVE ONLY ON YOUR PRIMARY CONTROLLER.
If instead you now want to get all the storage capacity from such a high capacity drive, perform the following:

1. Backup Drive Data
2. Configure Drive as Type 1 in CMOS Setup*
3. Use FDISK DOS Command to Delete Current Drive Partition
4. Use FDISK DOS Command to Create New Drive Partition
5. High-Level Format the Drive
6. Restore Data

* **NOTE**: Please ignore the drive parameters that will show up in CMOS when you use the Type 1 drive setting. The external BIOS of EIDE*MAX* auto-recognizes the correct drive parameters and allows the full storage capacity of drives set as Type 1. Promise uses the Type 1 setting for ease of installation purposes only.

Option 3: When Using an Existing Drive Physically Greater Than 528MB and Formatted to Full Capacity Using Software Drivers

If you wish to keep the formatting of the drive using software drivers, maintain the original drive settings in CMOS along with the software drivers. USE THESE FORMATTED DRIVES ONLY ON YOUR EXISTING PRIMARY CONTROLLER OR WHEN EIDE*MAX* IS THE PRIMARY CONTROLLER.
If you wish to eliminate the use of software drivers completely and continue to use the drive's full capacity, perform the following steps:

1. Backup Drive Data
2. Configure Drive as Type 1 in CMOS Setup*
3. Use FDISK DOS Command to Delete Current Drive Partition
4. Use FDISK DOS Command to Create New Drive Partition
5. High-Level Format the Drive
6. Restore Data
7. Remove All Reference to IDE High Capacity Software Drivers in DOS

Option 4: Installing New IDE or Enhanced IDE Drives

Perform following steps:

1. Configure Drive as Type 1 in CMOS Setup*
2. Create Drive Partition Using FDISK DOS Command
3. Perform High-Level Format

> * **NOTE**: Please ignore the drive parameters that will show up in CMOS when you use the Type 1 drive setting. The external BIOS of EIDE*MAX* auto-recognizes the correct drive parameters and allows the full storage capacity of drives set as Type 1. Promise uses the Type 1 setting for ease of installation purposes only.

Section 3

Advanced Issues

This section covers other advanced installation issues which the user may want to address. They are as follows:

1. Conflicting IRQ of EIDE*MAX* as Secondary Controller

If using EIDE*MAX* as a Secondary controller (the default), your system may have trouble recognizing the card because of a conflict with the IRQ address of another existing card. Normally EIDE*MAX* reserves IRQ 15 for communicating with the system. If there is a conflict, Promise recommends changing the setting of the conflicting card. If changes to an existing card are not desired, EIDE*MAX* allows users to select IRQ 12 for operation as follows:

A. Identify jumper block JP2
B. Move jumper connector over pins 5-6 to user IRQ12
C. Your card should now be recognized by your system.

2. Windows 32-Bit Access

If you are using Windows' 32-bit disk access or you intend to turn on 32-bit Disk Access mode, you need to install the Windows enhanced mode drivers:

MAXCTRL.386 and MAXI13.386.

A. Copy both MAXCTRL.386 and MAXI13.386 files from the Utility Diskette (supplied with EIDE*MAX*) to your Windows SYSTEM directory. Use DOS or Windows File Manager to perform the copy.

Example: Copy A:*.386 C:\Windows\System

B. Edit the SYSTEM.INI file found in your Windows directory using a text editor.

C. Replace the following three lines in the [386Enh] section of the SYSTEM.INI file.

```
32BitDiskAccess=OFF
device=*wdctrl
device=*int13
```

with

```
32BitDiskAccess=ON
device=[drive:][\path\]MAXCTRL.386
device=[drive:][\path\]MAXI13.386
```

If the statements do not exist, simply add them into the [386Enh] section of SYSTEM.INI. After editing, you should have statements similar to the following:


```
[386Enh]
....
32BitDiskAccess=ON
    device=C:\Windows\System\MAXCTRL.386
    device=C:\Windows\System\MAXI13.386
    ....
```

D. Restart the Windows

NOTE: Usually, IDE CD-ROM & Tape backup are 16-bit access. Therefore, when you have the devices installed, you may not enable the Windows 32-bit access.

However, if you installed the MAXCTRL.386 & MAXI13.386 drivers, these drivers will allow you to enable the Windows 32-bit access while the IDE CD-ROM or tape backup was attached on the **Secondary** controller.

We strongly recommend you to attach your IDE CD-ROM or tape backup devices **ONLY** on the **Secondary** controller. Installing IDE CD-ROM or Tape backup on the Primary controller might encounter 32-bit access problem in certain operating systems.

3. Disabling IDE Function of EIDE*MAX*

You may disable EIDE*MAX*'s build-in IDE channel if another secondary channel or a system conflict exists. In this case you may choose to disable the IDE channel on the card. This still allows EIDE*MAX* to provide LBA mode functions to your existing controller.

Disable the IDE connector as follows:

A. Identify Jumper block JP3

B. Move jumper over pins 2-3 to disable IDE.

4. Disabling BIOS Functions of EIDE*MAX*

You may disable the BIOS on EIDE*MAX* if your system already provides the EIDE*MAX*'s BIOS functions and you want to use EIDE*MAX* only as a secondary controller. This would be the case if you use EIDE*MAX* solely as an ATAPI CD ROM controller. In this case you may choose to disable the BIOS on the card.

Disable the BIOS as follows:

A. Identify Jumper block JP5

B. Move jumper over pins 2-3 to disable BIOS

Section 4

EIDE*MAX* Trouble Shooting

If you ran into a problem while installing EIDE*MAX*, please use the following steps as a guide to locate and correct the problem.

1. Check For I/O Conflict

The EIDE*MAX* is set up to serve as the secondary IDE port in your system with a device interrupt of IRQ15. If you already have a secondary port in the system or any adapter card that is using IRQ15, please disable the secondary IDE port on the EIDE*MAX* or change the IRQ of the adapter card.

2. Check For ROM Address Conflict

EIDE*MAX* ROM BIOS address is pre-set at D000 - D3FF. If you have any adapter card with external BIOS support, please check that adapter card's manual to make sure that an address conflict does not exist.

3. Check Hard Drive LBA Support

EIDE*MAX* external BIOS provides LBA translation to support drive capacities over 528 MB. This feature can be activated when you set the Drive Type=Type 1 in the system CMOS SETUP. If you already have a high capacity hard drive that was previously formatted to work in a non-LBA environment (528MB or under) and you want to continue using it as is, maintain the original drive settings during system CMOS setup.

4. Memory Management Issues

If you have used a memory manager program (such as QEMM or EMM386) prior to installing EIDE*MAX*, use a "clean" version of the files CONFIG.SYS and AUTOEXEC.BAT to boot your system when working with EIDE*MAX*. Once EIDE*MAX* is installed, you may re-install the memory management program. EIDE*MAX's* external BIOS may conflict with memory already used by such programs.

5. Encountering a "QEMM Int13 ROM Handler Error" Message

With the memory manager QEMM 7.5 or higher, you must use the "optimize /ST" option to add proper exclusions in order to avoid device conflicts with EIDE*MAX*. On previous revisions of QEMM, you may manually add the "XSTI=13" parameter.

6. Non-Standard IDE Controller Support

EIDE*MAX* will work with most standard IDE controllers and provides them LBA support. However some IDE controllers (such as caching controllers) that already use external BIOS or require special driver support may not work properly. Consult your adapter manufacturer and/or manual to make sure your IDE controller will work with LBA translation provided by EIDE*MAX*.

7. Windows driver issues

If you need to run 32-Disk Access, please follows the instructions in

Section 3 that install the EIDE*MAX's* Windows driver. Without proper installation, you may experience data loss.

If you have a problem starting Windows, change the CONFIG.SYS reference: DOS=HIGH, UMB to DOS=HIGH.

8. Connecting More Than One Drive On The Same IDE Cable

If you install more than one drive on the same IDE cable, make sure you set the proper jumper on the installed drives. You have to set one drive as MASTER, and the other one as SLAVE. Please consult your hard disk manual about how to setup proper MASTER / SLAVE mode.

9. Installing a CD-ROM Drive

If you connect an IDE CD-ROM with any IDE drive on the same cable, please make sure you adjust the MASTER / SLAVE jumper on both the hard drive and the CD-ROM drive (only one MASTER and one SLAVE may be used on the same cable).

We strongly recommend you to attach your IDE CD-ROM or tape backup devices **ONLY** on the **Secondary** controller. Installing IDE CD-ROM or Tape backup on the Primary controller might encounter 32-bit access problem in certain operating systems. Detailed information can be seen on Section 3, Advanced Issues.

10. DR DOS Revision 6.0 and Lower

The DR DOS partition is based on Microsoft's DOS 3.3. DR DOS 6.0 will be incompatible with the creation of LBA-translated partitions. During setup, DR DOS will report that no accessible hard disk is available. However, the updated Novell DOS 7 does not have this problem.

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This warranty:

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(b) is not transferable; and

(c) is valid only when accompanied by a copy of the original purchase receipt.

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WARRANTY SERVICE

will give you a return merchandise authorization ("RMA") number. Then return the Product with a copy your proof of purchase to:

Promise Technology, Inc.
Customer Support Department
1460 Koll Circle, San Jose, CA 95112

You must follow the following packaging guidelines for returning Products:

(1) Use the original shipping carton and packaging;

(2) Include a summary of the problem(s) with Product;

(3) Write an attention line on the box with the RMA number (this is very important); and

(4) Include a copy of proof of purchase.

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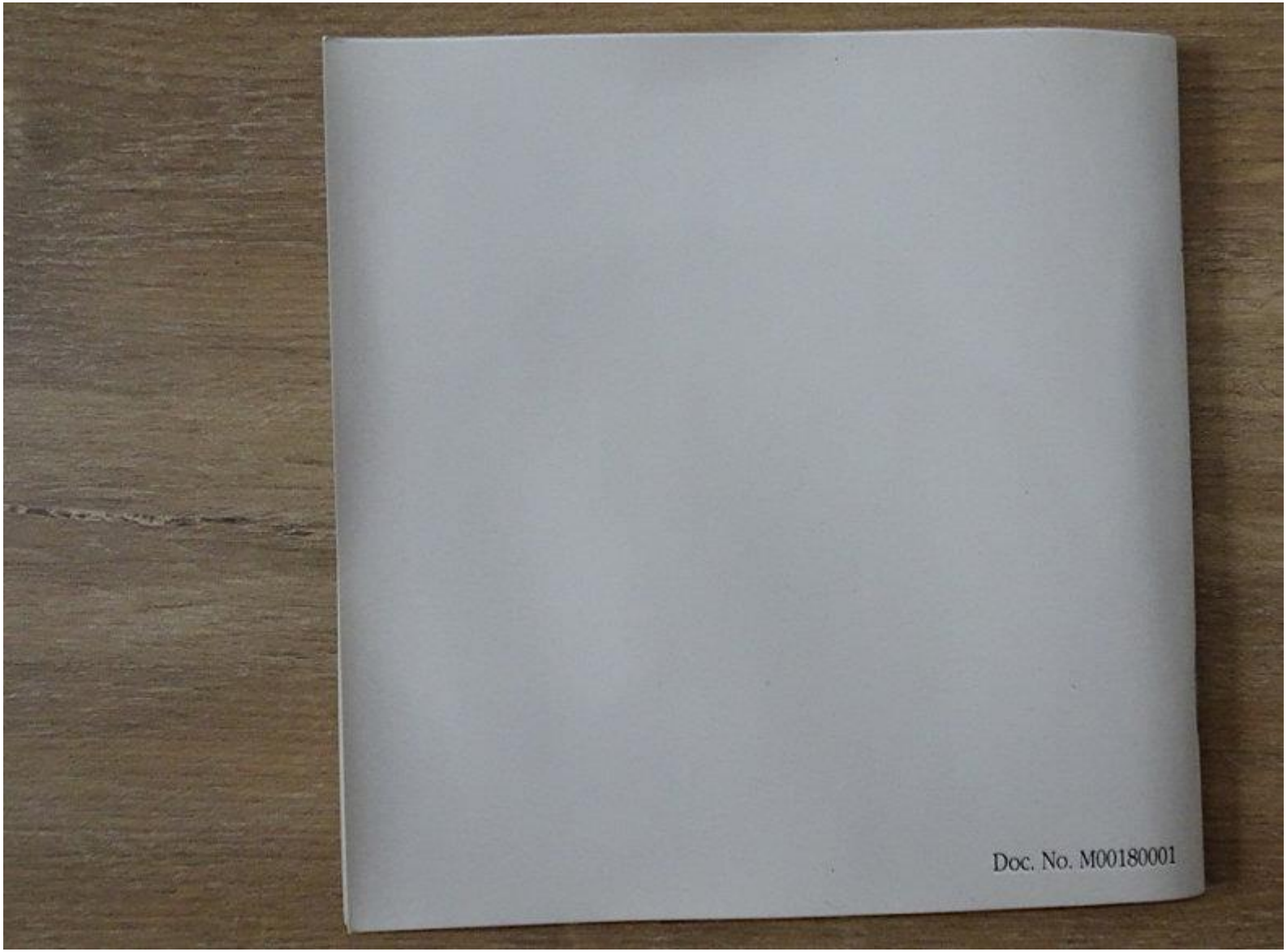
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