

Hard Drive: MAX

3.5"/SL IDE / AT

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7 1 2 0 A MAXTOR
NO MORE PRODUCED

Form 3.5"/SLIMLII
Capacity form/unform 124/ 154
Seek time / track 15.0/ 3.0 m:
Controller IDE / AT
Cache/Buffer 64 KB
Data transfer rate 1.500 MB/S
6.000 MB/S
Recording method RLL 1/7

Supply voltage 5/12 V
Power: sleep 0.1 W
standby 0.7 W
idle 1.8 W
seek W
read/write 4.8 W
spin-up W

Lift/Lock/Park YES

anslation

-+-----+-----
6| 1024| 762
6| 14| 8
7| 17| 39

non-operating

-40 65
12.192
70

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Certificates ,FCC,TUV,UL1950,VDE

Layout

MAXTOR 7120A/7060A PRODUCT MANUAL PART #1194 REVISION B

-----+
+-+-----+ |
+++++++ |
J11-+ |J14+--J15 |XX
J13----+ +-+ |XX
+--+J16|XX

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|XX
|X1
|
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Jumpers

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Jumper setting
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PCBA 48

Note: Jumpers J14, J15, J16, and J19 are reserved.
Abnormal operation may occur if altered

PCBA 38

Note: Jumpers J14 and J15 are reserved.
Abnormal operation may occur if altered

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J11 PCBA 38 I/O Channel Ready

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CLOSED	Option Enabled
OPEN	Option Disabled (default)

J13/J14 PCBA 38 Power-up Configuration

	J14	J13	Cyl	H
7120A	CLOSED	CLOSED	936	10
	OPEN	OPEN	1024	14
	CLOSED	OPEN	762	4
	OPEN	CLOSED	900	10



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7060A	CLOSED	CLOSED	467	10
	OPEN	OPEN	1024	14
	CLOSED	OPEN	762	4
	OPEN	CLOSED	925	10

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J17 PCBA 38 Drive Model Number

CLOSED Model Number 7120A
 OPEN Model Number 7060A

J18 PCBA 38 ECC Bytes

CLOSED 4 Bytes (default)
 OEPN 7 Bytes

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J19/J20 PCBA 38 Master/Slave

J19 CLOSED Only drive in :
J20 CLOSED

J19 OPEN Master in dual
J20 CLOSED

J19 CLOSED Slave in dual
J20 OPEN

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A master/slave relationship exists between drive 0 the master, and drive 1 the slave.

J11 PCBA 48 I/O Channel Ready

CLOSED Option Enabled
OPEN Option Disabled (default)



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J13 PCBA 48 Power-up Config

7120A	J13	Cyl	Hds	Sec
CLOSED		936	16	17
OPEN		1024	14	17

7060A	CLOSED	925	8	17
	OPEN	1024	7	17

J17 PCBA 48 Drive Model Number

CLOSED	Model Number	7120A
OPEN	Model Number	7060A

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J18 PCBA 48 ECC Bytes

CLOSED	4 Bytes (default)
OPEN	7 Bytes

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J20 PCBA 48 Master/Slave

J20 CLOSED Only drive in :

J20 CLOSED Master in dual

J20 OPEN Slave in dual

A master/slave relationship exists between the master, and drive 1 the slave.

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J2 DC Power and pin connector assignments

+-----+				pin 1	+12 VDC
1	2	3	4	pin 2	+12 V Ground Return
+-----+				pin 3	+ 5 V Ground Return
				pin 4	+ 5 VDC

Install

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Notes of Installation

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Automatic Headpark and Lock Operation

Immediately following power-down, dynamic braking of the spinning disks delays momentarily and lets the heads reach a mechanical stop. A small fixed magnet holds the disks spin down. The heads are released and the heads are applied.



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Dual Drive Support

Two drives may be accessed via a common range of I/O addresses. A jumper

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a master. When J20 is not jumpered, the drive is a master or slave determines the master/slave for that drive. DASP- (Drive Active Slave) is a jumpered signal that serves as an input on

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the slave. At power on, the master allows a time period for the slave to set the DASP- line. If the slave fails to do so, the master assumes it is the only drive in the system. After DASP- has been set, or after the master's input period has expired, the DASP- line is used as a drive active line and is set when the host accesses either drive.

All Task File registers are written in parallel to both drives. The interface processor on each drive decides whether a command written to it should be executed; this depends on the type of command and which drive is selected. Only the drive selected executes the command and activates the data bus in response to host I/O reads; the drive not selected remains inactive.

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Diagnostics command, both drives execute diagnostics. The slave reports its status with its own, and then reports to the host.



Drive Type

7000 Series drives incorporate a dynamic
Within limits of the drive's capacity, the a
configure CMOS to any DOS Legal ATA

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Cooling

The cabinet cooling must be designed by G-P
ambient temperatures measured 0,5" ab
surfaces do not exceed temperature spe
description.

Power Connector

Power is applied through J2, a 4-pin con
AMP P/N 1-480424-0).

Never force polarized connectors into p

Features

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Introduction

Maxtor 7000 Series AT disk drives are 1" high, 3.5" random access
storage devices which incorporate an on-board AT controller. Maxtor
engineers have applied recent advances in hard drive technology to
the design and manufacture of these drives. Reduced size and in-
creased durability make them especially well-suited to notebook,
laptop, and desktop applications.

Defect and Error Management

7000 Series drives employ a "push-down" defect management routine.

The drive organizes physical sectors into a logical string. If a

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Any defective sectors are recorded while the drive is still at the factory and the resulting list loads into SRAM during power on.



In the event of a data error, Error Correction Code (ECC) recovery even when several bits of the code are corrupted.

SRAM Buffer

The 3 major areas of SRAM (Static Random Access Memory) are defect management, a read buffer, and a write buffer.

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Drive defects load into SRAM from the read buffer. Defects are referenced for every read, write, and erase operation and causes all remaining logical data sectors to be shifted. Since the defect list is in SRAM, the drive maintains a logical offset to locate a desired sector.

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The large read buffer and smaller write buffer are optimized for both fast and slow host systems.

Data Reliability

Reliability specifications require a proper host/drive interface, including correct interface signals, supply voltages, environmental conditions, and power in the host system. General error rate covers all errors caused by factory-located defects and host system failures. Specified error rates are based on the average of:

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1. the drive operates within DC power requirements, and

2. any errors caused by media defects or host system failures are excluded from error rate computations.

Seek Time

	Average msec. typ.		15	
	Average msec. max.		27	
Latency	msec. avg.		8.5	



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Reliability and Maintenance

MTBF 150,000 POH (power-on-hours)
 AFR (Annualized Failure Rate) 1.7%
 Component design life 5 years minimum

Magnetic Field

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The externally induced magnetic flux density as measured at the disk surface.

Basic Installation Steps

Install a 40-pin ribbon cable connector. 1 cable represents pin 1 and must be oriented to the drive connector and at the host connector.

Install a DC power connector.

Secure the drive in a drive bay with 6-32 screws.

If the AT BIOS supports a user-programmable drive type, program the drive parameters that will give the highest available capacity.

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If the AT BIOS does not support user-programmable drive types, choose one of the drive's translation parameters that matches a standard drive type in BIOS.

The drive is now ready for partitioning and high-level formatting with any operating system.

General

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INSTALLATION PROCEDURE FOR AN IDE DRIVE

1. Install a 40 pin Data Cable (identified by the striped edge) to the power connector on the drive



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2. Install a DC power cable to the back connector on the drive

3. Verify the jumper configuration. (Note: Master will be the bootable drive.) Also make sure the drive to be the Master in a two drive system.

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4. Apply power to the computer.

4a. When memory test is complete, enter the CMOS set-up. (Note: There are various ways to enter the CMOS set-up; refer to system's manual for details.)

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4b. If your system's BIOS supports hard drive type, program the BIOS with the hard drive type. If your system does not support hard drive type choose parameters that closely match but do not exceed the drive's MegaByte capacity. Escape from set-up and then choose write to CMOS and exit.

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5. Boot from a DOS diskette that has FDISK.EXE and FORMAT.COM on it. At the A> prompt type in FDISK. At the menu options select option 1 to create a DOS partition. Another menu will appear and from those options choose 1 to create a Primary DOS partition. Select yes to make 1 large partition and it will automatically become active. Then escape from FDISK.

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format).

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To configure the drive as a :
proceed with steps 5a. and 6a.

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5a. At the C> prompt type in F:
select option 5 to switch :
disk drive number 2. Then :
partition, then select opt:
partition or option 2 to cr G-P
(Note: C and D drives will
but only the Primary parti:
active).

r

OS

6a. Proceed with a high-level :
D: (Note: Make sure the cor
for format).

MAT
ted

7. The drive is now bootable. A:
from A and press reset to rel
displayed, the drive is now i

be

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