

ALF TURBO II

DISKETTE DUPLICATOR



A Turbo II system can copy these 2,550 disks in 8 hours.

**COPIES MOST 5 1/4" FORMATS
RAPIDLY AND RELIABLY**

If you need to copy 5 1/4" disks, you need an ALF Turbo II copy system.

Whether you need to make dozens of copies each day or thousands, the Turbo II system is the perfect answer. It's easy to use, versatile, fast, reliable, accurate, and—best of all—low cost.



Anyone can operate the Turbo II.

People who've never seen a disk duplicator—or even a computer—can start making copies with just a minute or two of explanation. Just load the disk drives and press "space" on the computer's keyboard. When the copies are finished, the video display shows "OK", or if a bad disk is found the display shows "BAD". The OK or BAD indication is cleared when a new disk is inserted, so there's

never any confusion about whether a disk has been copied or not.

The Turbo II uses half its drives for copying while the other half are being loaded and unloaded. The operator can inspect blank disks for visible defects before loading, apply labels after unloading, and perform other packaging tasks—all without slowing down the copying process of the system. The Turbo II system never sits "idle".

The Turbo II handles almost any format.

We haven't seen a soft-sectored 5 1/4" 48-track-per-inch format the Turbo II can't handle. Two basic copying modes are used: standard and non-indexed. Standard mode handles most formats: Hewlett-Packard Series 80, IBM PC, Kaypro, NEC PC-8000, Osborne, TRS-80, Zenith Z-100, and many others. The non-indexed mode allows very rapid duplication of certain unusual formats: Apple, Atari, and

Commodore.

The Turbo II can also use other disk drives, allowing even more formats to be copied. In place of the standard 48-track-per-inch drives, 96-track-per-inch drives can be used to copy formats in quad-density. Or, 8" drives can be used for copying single-density soft-sector 8" formats (such as standard CP/M disks). And 3 1/2" drives can be used for duplicating 3 1/2" disks.



The speed of the Turbo II is amazing.

Imagine copying over 2,500 disks in one day—with one system. With most other duplicators, you'd need at least two systems to keep that pace. The speed of the Turbo II varies depending on the complexity of the format:

| | APPLE & COMMODORE | ATARI | HP 80, IBM PC, KAYPRO, NEC PC-8000, OSBORNE, TRS-80, ZENITH Z-100, etc. | |
|-----------------|-------------------|-------|---|--------------|
| | | | SINGLE SIDED | DOUBLE SIDED |
| COPIES PER DAY | 2,551 | 2,265 | 1,267 | 688 |
| COPIES PER HOUR | 318 | 283 | 158 | 86 |

The Turbo II does formatting and copying simultaneously so you can copy onto blank disks, without preformatting. And the speeds shown above include a full verify, with bit-by-bit comparison of the master disk and the copies!

The Turbo series has years of proven performance.



ALF has been designing and manufacturing disk copiers since 1980. The Turbo II system is our sixth generation of copiers, combining years of experience with the latest technology. Based on the same principles as the extremely reliable Turbo I system, the Turbo II is expected to provide years of trouble-free operation. In two years of service at ALF, Turbo I systems gave ALF's Disk Copying Service the edge over many other copying services. The Turbo I systems worked day after day with minimum maintenance requirements, producing over a million copies and hundreds of satisfied customers. Several improvements have been

included in the Turbo II design, making it one of the most reliable disk copying systems available at any price.

Unlike most copiers which use one or two disk drives, the Turbo II system uses up to eight drives. If a problem develops in a drive, copying can continue without it, at a slower rate. You're not "shut down" because of a single drive failure. For critical operations, the low cost of the Turbo II's drive units lets you keep a spare on hand for instant replacement. Drive units can be swapped in just seconds—for maintenance, or to switch between 5 1/4", 5 1/4" quad-density, 8", or 3 1/2" drives.



Advanced technology assures accurate reproduction.

The Turbo II system features three microcomputers. One is a standard Apple II computer, which handles operator commands, displays status information, and performs the high-speed copying operations. Inside the Apple, two MCS48 computers constantly monitor and adjust various disk drive functions. These computers give the Turbo II enough

"intelligence" to perform numerous quality-control checks. Any flaws in the blank diskettes are found rapidly and indicated in the display. Certain drive malfunctions are detected and corrected or reported to the operator. Along with the bit-by-bit verification, these checks make the Turbo II the most accurate system we've ever offered.

With all these features, you'd expect a \$30,000 price tag.

But you'll be pleasantly surprised. A complete Turbo II system, including the Apple computer, is under \$5,600. If disk copying is your business, you can easily afford several Turbo II systems instead of just one of the expensive, hard-disk based copiers.

If you don't need thousands of

copies each day, there's a Turbo II system to fit your exact needs—thanks to the Turbo II's unique modular design. You can start with a two drive system for about \$2,600 (under \$1,500 if you already have an Apple II). As your needs increase, you can expand the Turbo II for greater capacity.



Turbo II. The ideal disk copier for you.

The Turbo II system consists of an Apple //e computer (or Apple // or Apple //+), video monitor, Turbo II Controller Cards, and Dual Drive Units. The minimum configuration uses one controller card and one dual drive unit, and the standard (maximum) configuration uses two controller cards and four dual drive units. Other possible configurations are one controller card with two dual drive units, and two controller cards with three dual drive units. The minimum configuration cannot continue copying if either or both drives fail. All other configurations can copy with a single drive failure, or even multiple drive failures in some cases.

The Turbo II system is supplied with programs for copying most soft-sector 5 1/4" formats, onto either write-enabled or no-notch diskettes. Before a disk can be copied, a "master disk" must be created using mastering programs tailored for each format. Mastering programs are supplied for Apple (16-sector), Atari, and IBM PC formats. Additional mastering programs are sold separately. Before ordering a Turbo II system, check with ALF to be sure the formats you wish to copy are available.

Dual Drive Units feature 5 1/4", single/double side, 48-track-per-inch disk drives. On special order, 5 1/4", single/double side, 96-track-per-inch disk drives can be installed. Also, 8" and 3 1/2" drives can be used with the Turbo II system, check with ALF for availability.

Approximate copying time with various configurations is shown below:

COPIES PER HOUR / PER 8-HOUR DAY

| NUMBER OF DUAL DRIVE UNITS | APPLE & COMMODORE | ATARI | OTHER | OTHER 2-SIDED |
|----------------------------|-------------------|-------------|-------------|---------------|
| 1* | 138 / 1,107 | 124 / 993 | 97 / 778 | 59 / 472 |
| 2** | 234 / 1,878 | 211 / 1,694 | 142 / 1,136 | 78 / 626 |
| 3 | 281 / 2,250 | 246 / 1,972 | 147 / 1,180 | 83 / 666 |
| 4 | 318 / 2,551 | 283 / 2,265 | 158 / 1,267 | 86 / 688 |

* includes estimated load/unload time of 4 seconds. ** includes estimated load/unload time of 10 seconds. With 3 or 4 drive units, copying is continuous and load/unload time is not a factor.

Other than routine cleaning with a cleaning diskette (available locally), the drive units require little maintenance. When needed, drive units can be sent to ALF for maintenance or repair. If you already have standard electronic test equipment, you can do maintenance yourself using the tester program included and standard drive maintenance supplies available from Shugart Associates.

Complete Turbo II system, order number 10-6-1, \$5,594 (includes Apple //e and Monitor //e).

Turbo II system without Apple, order number 10-6-2, \$4,470

Controller Card only, order number 10-5-6, \$745

Dual Drive Unit only, order number 10-5-4, \$745

Prices subject to change. See price list for latest pricing, terms, and warranty information.

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