

**SONY**



Audio  
Cassette  
Duplicators

## HIGH SPEED TAPE DUPLICATION:

### Simple Physics, Elegant Solutions

The principle of in-cassette audio-tape duplication—quickly pulling magnetic tape across playback and recording heads—is simple. Designing affordable equipment that will do this consistently and dependably and produce large quantities of copies is, however, not so simple.

Sony has produced innovations in the most critical elements of audio tape duplication: the read and write heads, the motor and drive components, and the microprocessor controlled circuitry, to make all elements of the system work together flawlessly.

To achieve audio tape duplication, tape must make physical contact with the read and write heads of a system. Over time, the process takes its toll on the heads, causing inconsistent audio quality. Sony understood the pressure and friction that occurs in duplication and began manufacturing cassette duplicators with ferrite heads. Achieving mirror image duplication over thousands of tape passes requires heads of exceptional strength and durability. With a polished hard glass face, the ferrite head minimizes tape friction and wear. The advantages are clean-running operations, exceptionally long life and excellent tape-to-head contact for optimum audio quality.

For high quality copies on every pass, the tape movement must be precise and unvarying. This requires motors and other drive components manufactured with exacting precision.

The main drive motors in Sony duplicators are brushless, direct current motors that turn on a magnetic field. The motor shaft, manufactured to very tight tolerances for roundness, are secured in ball bearings, substantially reducing friction and wear. In the latest designed models, these motors drive the capstan and flywheel assembly via two durable belts. This assembly provides the rotational control of direction and speed as the tape travels across the heads. Even the belts last longer due to reduced friction in these components.

In Sony's new audio cassette duplicators, the direct drive motors help control the tape movement across the heads. Unlike the duplicator designs used by other manufacturers, Sony's new motors have no idlers, clutches and gears. Fewer mechanical parts mean fewer opportunities for wear-related motor problems. Smart and efficiently designed, these audio cassette duplicators also offer a separate rewind control and provide exceptionally high-speed, low-friction tape rewind.

What's more, the microprocessor and its related circuitry make the whole system perform flawlessly. Sony's electronically controlled design allows for fewer mechanical parts, making the system simple yet reliable throughout the life of the product. With Sony high speed audio in-cassette duplication products, the physics may be simple, but the innovations provide truly elegant solutions.



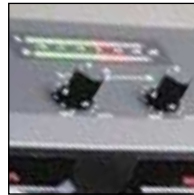
*Sony's world-class design and advanced technology produce the highest quality in audio cassette duplication with performance, reliability and value on which you can depend.*

## STEREO



### CCP-2310F/2410F and CCP-2300/2400

At an economical price, the CCP-2300 system produces consistent quality stereo copies. For production line applications, the CCP-2310F system features Sony ferrite heads for added durability and dependability. Both systems offer features such as single cable connections between each expansion unit, 16 times normal speed operation and rapid rewind. An audible beep tone signals the operator when tape duplication is completed. The Sony CCP-2310F and CCP-2300 duplicators offer dependable, exceptional performance in a compact package.



*The precise control knobs and LED meters give you more control of your duplication jobs, allowing you to tailor the sound level as you need.*

## MONAURAL



### CCP-1310F/1410F and CCP-1300/1400

The economical CCP-1300 system copies up to three cassettes simultaneously. System expansion is easy; simply connect 4-copy CCP-1400 expansion units as needed. In production applications, the CCP-1310F and its CCP-1410F expansion units respond to the most demanding quantity and continuous operation requirements. Operating at 16 times normal speed and with the ability to produce 43 simultaneous copies per run, Sony's monaural systems offer features, performance and reliability that are truly state-of-the-art.



*When the auto copy button is pressed, all cassettes rewind to the beginning, then enter the duplication mode. After duplication is complete, all cassettes rewind to the beginning and stop. Basic operation at the touch of one button.*

# CCP SPECIFICATION TABLE

SPECIFICATIONS	STEREO		MONO	
ITEM	CCP-2310F/2410F	CCP-2300/2400	CCP-1310F/1410F	CCP-1300/1400
COPY SPEED	30 ips	30 ips	30 ips	30 ips
REWIND TIME (C-60)	~40 seconds	~40 seconds	~40 seconds	~40 seconds
BANDWIDTH	40Hz-10kHz	40Hz-12.5kHz	40Hz-10kHz	50Hz-10kHz
EQUALIZATION	Type 1 (normal bias)	Type 1 (normal bias)	Type 1 (normal bias)	Type 1 (normal bias)
SIG/NOISE	>49 dB	>50 dB	>52 dB	>52 dB
CROSSTALK REJECTION (1kHz at Ddb)	>53 dB between Side A and B	>52 dB between Side A and B	>52 dB between Side A and B	>52 dB between Side A and B
TOTAL HARMONIC DISTORTION (accumulative total)	<3%	<3%	<3%	<3%
WOW/FLUTTER (accumulative total)	<0.23%	<0.23%	<0.23%	<0.23%
PLAY/RECORD HEADS	4 Track, 4 Channel Glass Bonded Ferrite	4 Track, 4 Channel Hexalloy	2 Track, 2 Channel Glass Bonded Ferrite	2 Track, 2 Channel Sendust
ERASE HEADS	Yes	Yes	Yes	Yes
POWER REQUIREMENTS	120 VAC, 60 Hz	120 VAC, 60 Hz	120 VAC, 60 Hz	120 VAC, 60 Hz
POWER CONSUMPTION	0.67A	0.74A	0.6A	0.6A
CAPSTAN MOTOR	1) DC Brushless	1) DC Brushless	1) DC Brushless	1) DC Brushless
REEL MOTOR	8) DC	8) DC	8) DC	8) DC
WEIGHT	22 lb., 8 oz.	22 lb., 8 oz.	21 lb., 10 oz.	21 lb., 10 oz.
DIMENSIONS				
Width: (in.)	13	13	13	13
Height: (in.)	6 3/8	6 3/8	6 3/8	6 3/8
Depth: (in.)	15 1/8	15 1/8	15 1/8	15 1/8
MACHINE WARRANTY (parts/labor)	1 Year	1 Year	1 Year	1 Year
HEAD WARRANTY	2 Years	1 Year	2 Years	1 Year
EXPANSION UNIT CAPABILITY	10 units for 43 Simultaneous Copies	10 units for 43 Simultaneous Copies	10 units for 43 Simultaneous Copies	10 units for 43 Simultaneous Copies

© 2001 Sony Electronics Inc.  
 Reproduction in whole or in part without written permission is prohibited. All rights reserved.

Features and specifications subject to change without notice. Sony is a trademark of Sony.

**SONY**

Sony Electronics Inc.  
 One Sony Drive  
 Park Ridge, NJ 07656

[www.sony.com/professional](http://www.sony.com/professional)

ES-022-C  
 Printed in USA 7/01