

digital**COMPUTER
OPTIONS****570
MAGNETIC TAPE
TRANSPORT**

8/64

The Type 570 is a digital magnetic tape transport designed for use with any Programmed Data Processor. With PDPs 1, 4, 5, and 7 the transport connects through a Type 521 Interface and a Type 57A Control. With PDP-6 a 521 Interface, 516 Control, and 136 Data Control are used.

Included with the 570 is a multiplex interface which permits time-shared use of the transport by two tape controls on the same or different computers. With this feature the user can establish a tape pool of given capacity with fewer transports than would be needed in a non-sharing system. In addition, one tape control under program control may use a number of transports for split or merge operations, returning the transports to the pool only when the split or merge is complete. A third application of the interface is in the exchange of information between computers via tape.

The 570 records at densities of 200, 556, and 800 characters per inch at speeds of 75 or 112.5 inches per second. Maximum transfer rate is 90,000 characters per second. Electro-pneumatic drive keeps tape stress far below that of pinch roller drives, with consequent reduction of tape distortion and wear. At the same time, total acceleration time to constant tape speed is equal to that of pinch roller drives. Other features include: straight-through threading, automatic rewind-brake-stop sequence, and a rewind time of 90 seconds for 2400 feet.

Electro-Pneumatic Drive: The 570 Transport mechanism is an electro-pneumatic one of new design. Tape is moved by contrarotating, porous capstans, against which the tape is forced by air pressure from clamps over the capstans. Motion is stopped when the tape is lifted off the capstan by back pressure from within the capstan, and the tape is forced against a brake, also by air pressure.

This technique offers advantages over vacuum-controlled systems. First, the pressure differential that forces the tape against the capstan is not limited to one atmosphere; thus faster tape acceleration can be achieved. Second, the complicated switching necessary to reverse pressures from above atmospheric to below atmospheric is eliminated. Third, the momentary abrasion to which tape is subjected as it is pulled away from the vacuum on a slotted capstan is avoided.

Compared to pinch roller drives, the 570 capstan subjects the tape to one-tenth the tensile stress

because of air cushioning during acceleration, yet a stabilized read-write speed is reached just as soon (4 milliseconds maximum after the command signal). Indentation of the tape caused by impacts of pinch rollers is eliminated.

SPECIFICATIONS

FORMAT	NRZ1 6 data bits plus 1 parity bit End and load point sensing Compatible with IBM 729 I-VI
TAPE	Width 0.5 in. Length 2400 feet (1.5 mil) Reels 10½ in., IBM compatible with file protect ring
HEADS	Write-read gap 0.300 in. Dynamic and static skew 3 μ sec, skew correction by mechanical and electronic means
TAPE SPEED	75 or 112.5 ips (must be specified) Rewind 450 ips max Start time 4 ms max Stop time 4 ms max Start distance 0.20 in., $-1/16$, $+1/32$ in. Stop distance 0.30 in., $-1/16$ + $1/32$ in. Inter-record gap consistency, $-1/8$ + $1/16$ in.
DENSITY	200, 556, and 800 bits per in.
TRANSPORT MECHANISM	Electro-pneumatic. Positive pressure for forward, reverse, and stop; vacuum column tensioning by proportional servo control; straight-through threading
CONTROLS	Off, On, Load, Forward, Reverse, Stop, Rewind, Remote, Local, Rewind and Unload
PHYSICAL	Width 32⅞ in. Depth 32⅞ in. Height 68 in. Weight 850 lbs
PRIMARY POWER	115 vac, 25 amp

