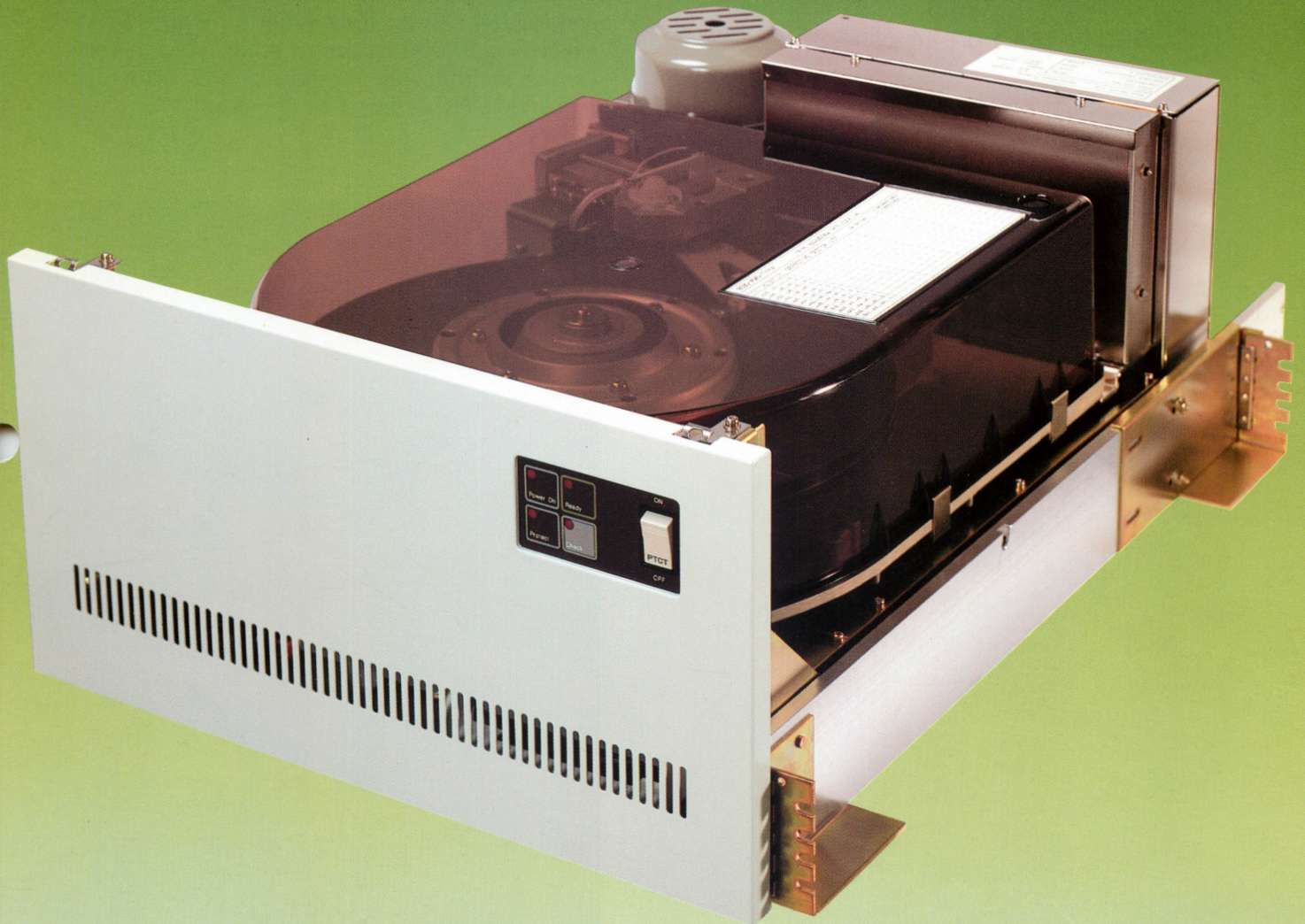


OEM DISK DRIVES

M2280K/N M2284K/N

14-inch Winchester-type fixed disk drives with 84- and 168-megabyte capacities, and 27-millisecond average positioning time.



M2284K



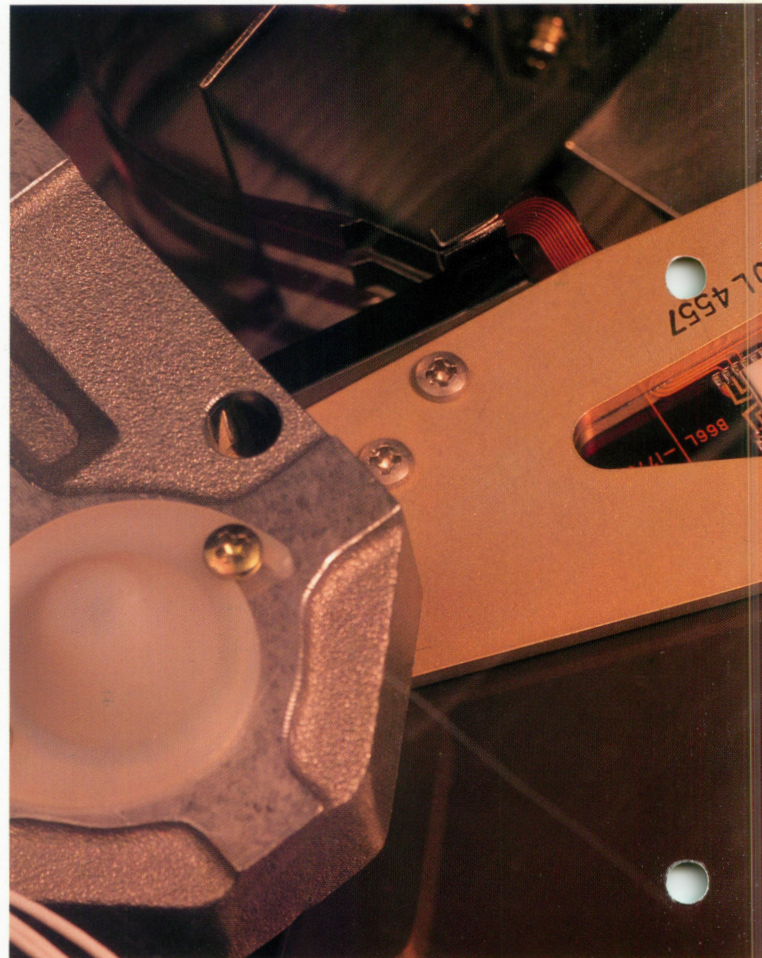
The M2280 and M2284 are 14-inch (356mm) Winchester-type fixed disk drives that provide large storage capacities, high performance, and enhanced reliability. Each model is available in two types: type K requires a 100, 115, or 120VAC power supply, and type N requires either 220 or 240VAC. These power supplies are available as options. Optional fixed heads are available for faster access. Each model consists mainly of a disk enclosure, a spindle drive motor, and five printed circuit boards. The disk enclosure integrates two or three disks, six to eleven Winchester-type contact start/stop heads, a rotary actuator, a DC spindle motor, and IC read preamplifiers.

Large capacities, high performance

The M2280 provides 84 megabytes, and the M2284 has 168 megabytes. The average positioning time is 27 milliseconds, and the data transfer rate is 1 megabyte per second. The optional 32 fixed heads offer faster access to 655 kilobytes.

High reliability

The completely sealed disk enclosure incorporates a breathing filter and an absolute recirculation filter to provide a contamination-free environment. Winchester-type contact start-stop heads eliminate moving parts for head loading and unloading. The head IC prevents read errors caused by external electrical noise. These features assure the M2280 and M2284 a mean-time-between-failures (MTBF) exceeding 10,000 power-on hours. Also, no preventive maintenance is required, and mean-time-to-repair (MTTR) is less than one hour.



Enlarged photo of head IC (HIC)

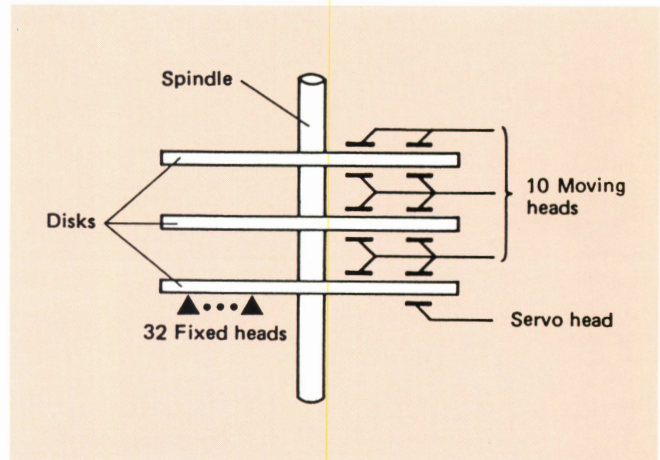
Compact, economical

The M2280 and M2284 disk drives can be mounted in a 19-inch rack in 6 pitches, saving installation space. Each model can also be mounted vertically in a system cabinet. The rotary actuator greatly reduces power consumption and heat dissipation.

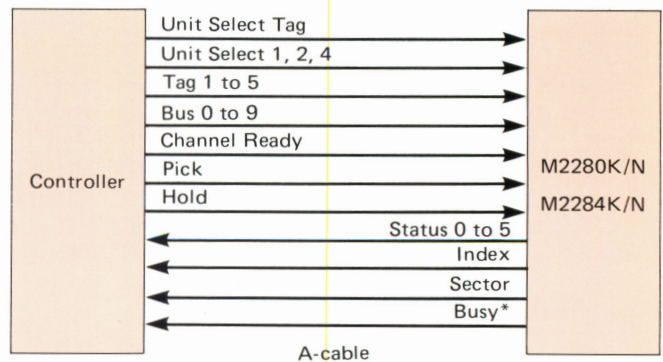
Dual channel option

The M2280 and M2284 can be accessed by two controllers when the dual channel option is provided.

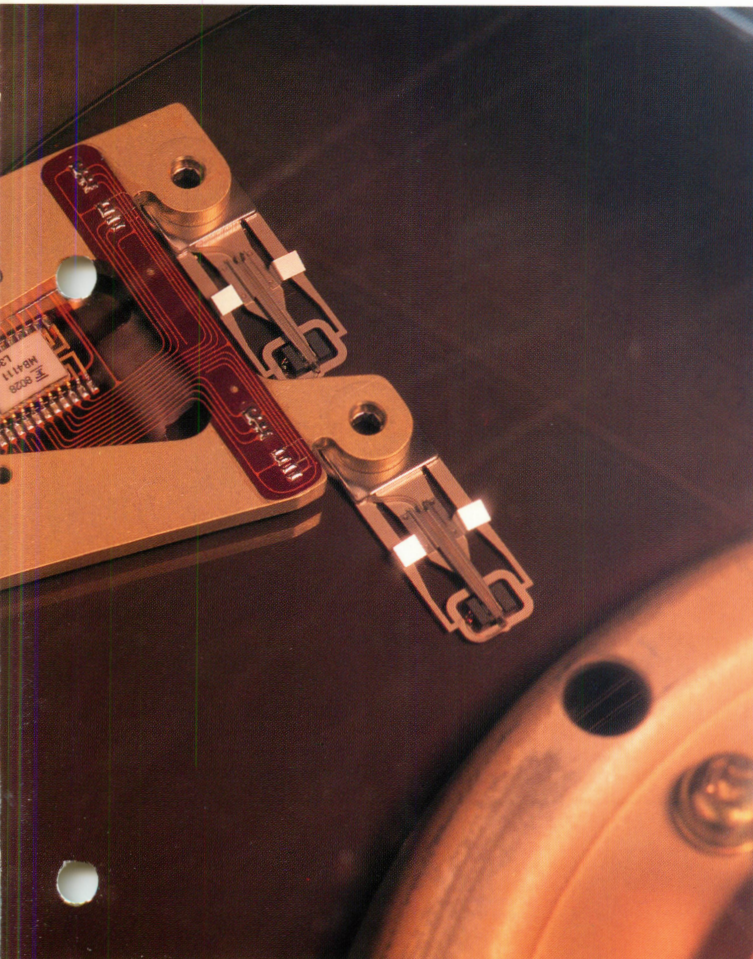
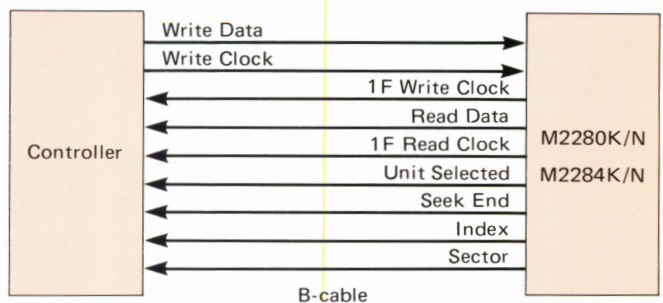
Head-disk structure



SMD interface



*Busy signal is used with the dual channel option.



FUNCTIONAL SPECIFICATIONS

		M2280K/N	M2284K/N
Storage capacity (unformatted)	Moving heads	84.27 megabytes	168.55 megabytes
	Fixed heads (optional)	655.36 kilobytes	
Disks (14-inch)		2	
Heads	Moving	5	10
	Servo	1	
	Fixed	32	
Track capacity (unformatted)		20,480 bytes	
Tracks per cylinder	Moving heads	5	10
	Fixed heads (optional)	8	
Cylinders	Moving heads	823	
	Fixed heads (optional)	4	
Sectors	Fixed	2 or more	
	Variable	Available	
Positioning time	Track-to-track	6 milliseconds	
	Average	27 milliseconds	
	Maximum	55 milliseconds	
Average latency time		10.12 milliseconds	
Rotational speed		2,964 rotations/minute	
Recording density		6,475 bits/inch	
Track density		680 tracks/inch	
Data transfer rate		1,012 kilobytes/second	
Recording code		MFM (Modified Frequency Modulation)	
Interface code		NRZ (Non-Return-to-Zero)	
Interface		SMD (Storage Module Drive)	
Head positioning method		Servo-controlled track-following	
Start time		Less than 40 seconds	
Stop time		Less than 30 seconds	

RELIABILITY SPECIFICATIONS

		M2280K/N, M2284K/N
Mean-time-between-failures (MTBF)		More than 10,000 power-on hours
Mean-time-to-repair (MTTR)		Less than 1 hour
Component life		5 years
Error rates	Recoverable errors	10 per 10 ¹¹ bits read
	Unrecoverable errors	10 per 10 ¹⁴ bits read
	Seek errors	10 per 10 ⁸ seeks

PHYSICAL SPECIFICATIONS

		M2280K M2284K	M2280N M2284N
Power requirements	Operating	100VAC±10%, 50/60Hz±1%, 2.5A 115VAC±15%, 60Hz±1%, 3A	220 ⁺²² / ₋₂₅ VAC, 50Hz±1%, 2A 240 ⁺²⁴ / ₋₂₇ VAC, 50Hz±1%, 2A
	Start-up	100VAC±10%, 50/60Hz±1%, 8A 115VAC±15%, 60Hz±1%, 9.5A	220 ⁺²² / ₋₂₅ VAC, 50Hz±1%, 5A 240 ⁺²⁴ / ₋₂₇ VAC, 50Hz±1%, 5A
Dimensions	Height	250 mm (9.84 in)	
	Width	416 mm (16.38 in)	
	Depth	650 mm (25.59 in)	
Weight		40 kg (88 lb)	
Ambient temperature	Operating	5° C to 40° C (41° F to 104° F)	
	Not operating	-40° C to 60° C (-40° F to 140° F)	
	Gradient	Less than 15° C (27° F)/hour	
Relative humidity	Operating	20% to 80% (non condensing)	
	Not operating	5% to 95%	
Vibration	Operating	Max. 0.2G (5Hz to 50Hz) Max. 1G (50Hz to 500Hz) Shock: max. 2G (max. 10 ms)	
	Not operating	Max. 0.4G (5Hz to 50Hz) Max. 1G (50Hz to 500Hz) Shock: max. 3G (max. 10 ms)	
	In storage or transport	Max. 3G Shock: max. 5G (max. 10 ms)	
Altitude	Operating	3,000 m (10,000 ft)	
	Not operating	12,000 m (40,000 ft)	



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Specifications are subject to change without notice. For the latest information, contact your local Fujitsu representative.
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