1. OUTLINE

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This specification provides a description for the TEAC FD-505, dual floppy disk drive. The FD-505 has two drives in the size of a conventional 41mm high 5.25 inch drive (equivalent to the TEAC FD-55GF), one is 1 inch high 5.25 inch mini floppy disk drive (TEAC FD-155GF, 1.6MB/1MB dual mode) and the other is 0.5 inch high 3.5 inch micro floppy disk drive (TEAC FD-05HF, 2MB/1MB dual mode).

Hereinafter, the FD-155GF part is abbreviated as the 5.25" FDD, the FD-05HF part as the 3.5" FDD, and the mixed part of the host interface for both FDDs as the Adapter PCBA.

Tables 1-1 through 1-3 show the outline of the dual FDD, the 5.25" FDD, and the 3.5" FDD.

Model name		FD-505-000
Safety standard on label		UL & CSA
Front bezel	· · · · · · · · · · · · · · · · · · ·	Beige (PS)
Eject button		Beige (PS) for both 5.25"/3.5" FDDs
LED indicator c	olor	Green for both 5.25"/3.5" FDDs
Disk installation method		One action manual installation and one action manual ejection for both 5.25"/3.5" FDDs
Frame ground terminal		Faston 187 tab on the rear side
Required power		$+5 \pm 5$ % and $+12 \pm 10$ %
Input signal te	rminator	$1k\Omega\pm5\%$ each for 5.25"/3.5" FDDs, unremovable
Host interface connector	Signal	34 pin card edge, conventional 5.25" type
Connector	Power	4 pin, conventional 5.25" type
Strap setting at delivery	For 5.25"	On the Adapter PCBA: DS1, MON1 On the 5.25" FDD : DS1, U0
(See item 11.)	For 3.5"	On the Adapter PCBA: DS2, MON4, DC
Host interface assignment at d		<pre>Pin 2 : HD IN input for 5.25" FDD, high density at high level (OPEN for 3.5" FDD) Pin 4 : OPEN Pin 10: MOTOR ON input for 3.5" FDD Pin 12: DRIVE SELECT input for 5.25" FDD Pin 14: DRIVE SELECT input for 3.5" FDD Pin 16: MOTOR ON input for 5.25" FDD Pin 34: DISK CHANGE for 5.25"/3.5" FDDs Others: The same as the conventional FDDs</pre>
Other optional	function	Not equipped.

(Table 1-1) Dual FDD specification outline

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Operation modes	1.6MB mode	1MB mod	e ·	0.5MB m	ode
(unformatted capacity)	Write/read	Write/r	ead	Read on	ly
5.25 inch disk used	High density	Normal	density	Normal	density
	2HD	2DD		2D	
Data transfer rate	500kbps	250kbps	300kbps	250kbps	300kbps
Disk rotational speed	360rpm	300rpm	360rpm	300rpm	360rpm
Track density	96tpi	96tpi		(48tpi)	
Track to track time	3msec				
Required power	+5V, +12V				
Head load mechanism	Not equipped. (CSS)			
Function setting at delivery	 LED on condi (U0 strap i Spindle moto Speed mode: high/normal Auto-chuckin INDEX/READ D Seek-comple Density mode pin 2, High strap is of DISK CHANGE/ (RY/RD stra 	s on and r on con Single s densiti g/Auto-r ATA outp te (Full setting density f.) READY se	IU stray dition: M peed mode es, I str ecalibrat ut condi- mask, E: : Using M at high lection:	p is off. MOTOR ON a (360rpr rap is or tion: Equ tion: Rea 2 strap : HD IN sig level (1) ipped. ady and is on.) gnal_on LG
Other optional function	Not equipped.				

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(Table 1-2) 5.25" FDD specification outline

Operation modes (unformatted capacity)	2MB mode, write/read	1MB mode, write/read
3.5 inch disk used	High density (2HD)	Normal density (2DD)
Data transfer rate	500kbps	250kbps
Disk rotational speed	300rpm	300rpm
Track density	135tpi	135tpi
Track to track time	3msec	
Required power	+5V	
Function setting at delivery	 Spindle motor on co 3. Auto-chucking/Auto- 4. INDEX/READ DATA out Ready and Seek-cor 5. Density mode settin detecting HD hole 6. DISK CHANGE/READY: 	-recalibration: Equipped.
Other optional function	Not equipped.	

Normal density 1MB mode, write/read: Normal density disk (2DD) Host system cannot identify preliminary which type of disk is installed in the 3.5" FDD (the 3.5" FDD can know the installed disk type by discriminating the HD hole). It is required for the host controller to provide some control such as read trial without errors or previous designation of density mode for the host.

3. PHYSICAL SPECIFICATION

(1) Width	: 146mm (5.748 in), Nom.
(2) Height	: 41.3mm (1.626 in), Nom.
(3) Depth	: 198mm (7.795 in), Nom., excluding front bezel
	203mm (7.992 in), Nom., including front bezel
(4) Weight	: 920g (2.03 lbs), Nom., 950g (2.09 lbs), Max.
(5) External view	: See Fig.1.

(6) Cooling : Natural air cooling

(7) Mounting: Mounting for the following directions are acceptable.

- (a) Front loading, mounted vertically.
- (b) Front loading, mounted horizontally with the 3.5" FDD up.
- (c) Mounting angle in items (a) and (b) should be less than 15° with front bezel up.

Note: As to the other mounting directions than the above will be considered separately.

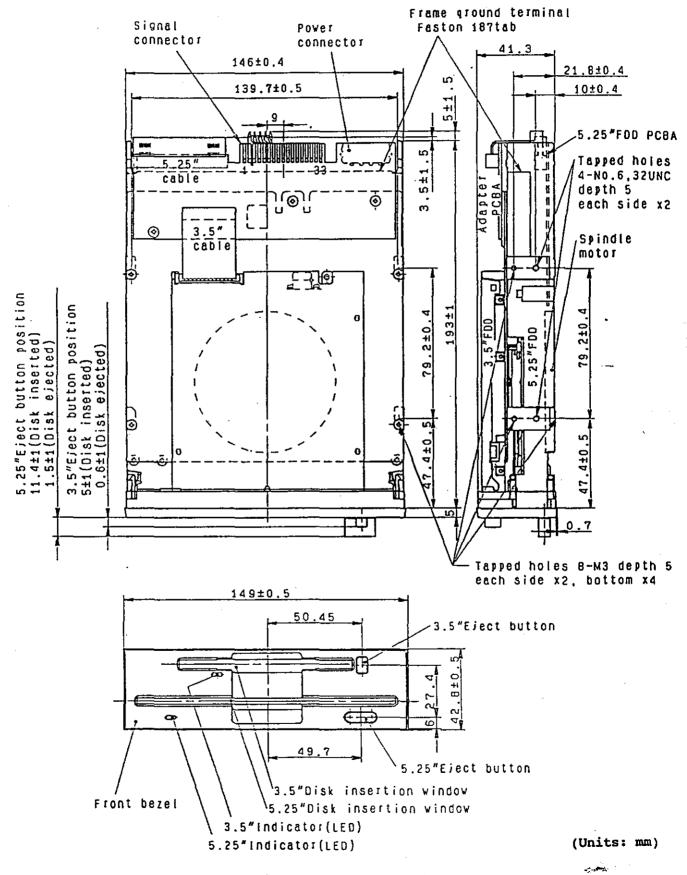
(8) Installation : With installation holes on the frame of the FDD.

Refer to Fig.l.

(9) Material of frame: Aluminum diecast

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(10) Material of front bezel: PPHOX (Zyron, complying with UL94-5V)



(Fig.1) FDD external view

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5. ENVIRONMENTAL CONDITIONS

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Note: The following requirements are applied for the unpackaged FDD.
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(1) Ambient temperature
                    : 4 ~ 51.7°C(39 ~ 125°F)
  (a) Operating
  (b) Storage
                    : -22 \sim 60^{\circ}C(-8 \sim 140^{\circ}F)
  (c) Transportation: -40 ~ 65°C(-40 ~ 149°F)
(2) Temperature gradient
  (a) Operating
                   : 20°C(36°F) or less per hour
  (b) Storage and transportation
                    : 30°C(54°F) or less per hour
(3) Relative humidity
                    : 20 ~ 80% (no condensation)
  (a) Operating
                     Max. wet bulb temperature shall be 29.4°C(85°F)
  (b) Storage
                    : 5 ~ 90% (no condensation)
                      Max. wet bulb temperature shall be 40°C(104°F)
  (c) Transportation: 5 - 95% (no condensation)
                      Max. wet bulb temperature shall be 45°C(113°F)
(4) Vibration
                    : 1.0G or less (10 ~ 100Hz, loct/min. sweep rate)
  (a) Operating
                       0.35G or less (100 ~ 600Hz, loct/min. sweep rate)
  (b) Transportation: 2G or less (10 ~ 100Hz, 1/4oct/min. sweep rate)
(5) Shock
  (a) Operating
        Write & read: 5G (11msec, 1/2 sine wave) or less
        Read only : 10G (llmsec, 1/2 sine wave) or less
                       Soft errors are allowed if they are recoverable
                       within three retries.
  (b) Transportation: 60G (11msec, 1/2 sine wave) or less
(6) Altitude (operating): -300m (-980 feet) - 5,000m (16,400 feet)
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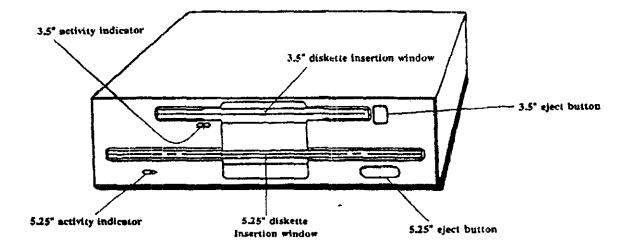
6. RELIABILITY

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(1) MTBF : 20,000 power on hours or more (for typical operation duty) : 35 minutes (2) MTTR (3) Design component life: 5 years (4) Disk life : 3×10^{6} passes/track or more (5) Disk insertion: 3×10^4 times or more (each for 5.25"/3.5" FDD) (6) Seek operation life : 1×10^7 random seeks or more (each for 5.25"/3.5" FDD) (7) Preventive maintenance: Not required (for typical operation duty) (8) Error rate (a) Soft error: 1 or less per 10⁹ bits read A soft (recoverable) error is defined that it can be read correctly within three retries. (b) Hard error: 1 or less per 10¹² bits read A hard (unrecoverable) error is defined that it cannot be read correctly within three retries. However, it is recommended to be followed by a recalibration to track 00 and four additional retries. (c) Seek error: 1 or less per 10⁶ seeks A seek error is defined that it can seek to a target track within one retry including a recalibration to track 00. (9) Safety standard: Complying with UL and CSA (10) Electro-static discharge test: 15kV (150pF, 330 Ω) or more No hard error and/or no component damage occur when the test is applied to the operator access area (front bezel area).

TEAC FD505 Combo Drive

Installation Manual



Your FD505 package includes:

- FD505 Combo Floppy Disk Drive Two AT type mounting rails
- Screws to mount AT rails
- Registration card/questionnaire
- Installation guide

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Introduction

Thank you for purchasing the TEAC FD505 Combo Floppy Disk Drive. This product is intended for use in IBM_{\odot} PC AT $_{\odot}$ and compatible computers. It allows you to expand the usefulness of your present computer by occupying one standard 5.25 inch computer bay, while providing 5.25 inch and 3.5 inch diskette compatibility. You can then utilize the other computer bay, normally occupied by a second floppy drive, for other peripherals, such as a CD-Rom, tape, or hard drive.

Tools You May Need

Depending on the design of your computer, you may need the following tools to complete the installation.

- ► a flat blade screwdriver
- a Phillips screwdriver
- needle nosed pliers

Handling the FD-505 Combo Drive

Please avoid placing your fingers on the upper cover. It is best to hold the FD-505 by the diecast frame, as indicated in Figure A.

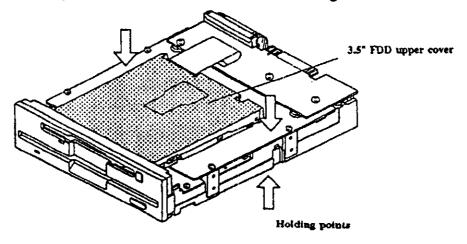
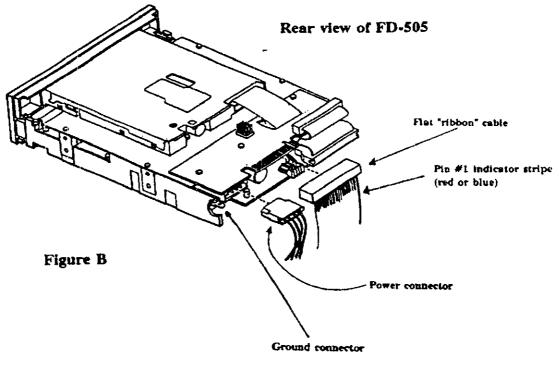


Figure A

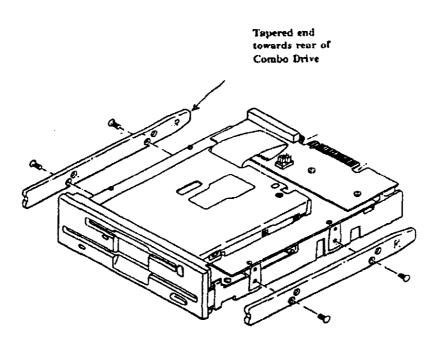
Preparing your Personal Computer for FD505 Installation

- 1. Unplug your computer.
- 2. Detach all input and output devices from your computer, such as printer, keyboard, monitor, etc.
- 3. Remove cover from your computer. Refer to your computer system manual for this procedure.
- 4. Note the two cables that are connected to your current floppy disk drives, as these same cables will be required to install your FD505. The floppy interface cable is the flat "ribbon" type, and the power connector consists of the 4 separate wires attached to a single connector. See Figure B.
- 5. Your system may also have a single ground wire attached to the floppy disk drive. Carefully remove all these cables from your floppy disk drive. Remove the current floppy drive from your system.
- 6. Remove current floppy drives from your system and install the FD-505.



Attaching Mounting Rails, if Required

Your system may or may not require rails to mount the floppy drives. If rails are required, attach as shown in Figure C.



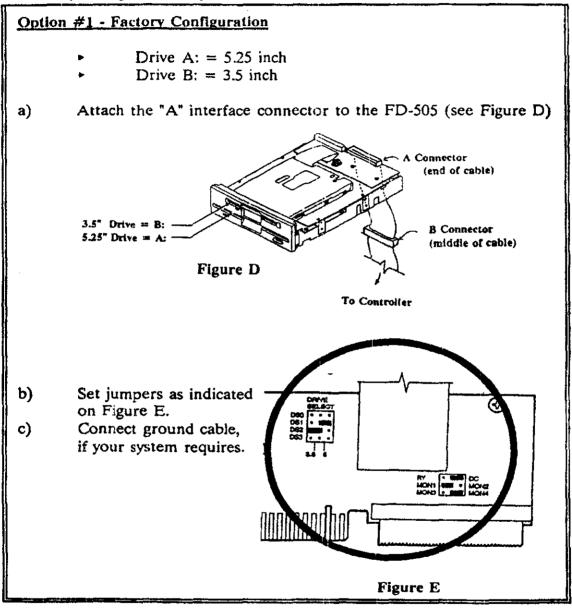
Attach mounting rail to bottom bole set on both sides of the Combo Drive (4 places

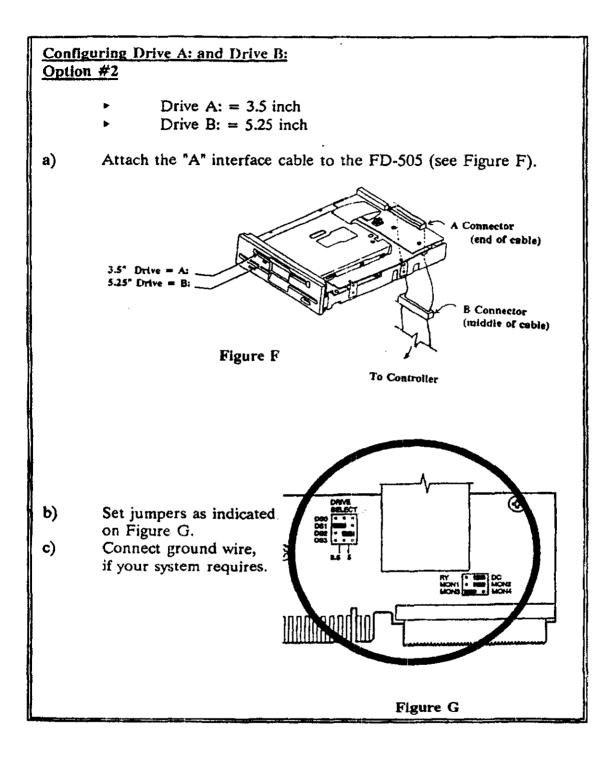
Attach screws through bottom hole on mounting rails

Figure C

Configuring Drive A: and Drive B:

The following two user definable configurations are available to choose from at the time of installation. Your FD-505 Combo Drive is factory configured to Option #1.



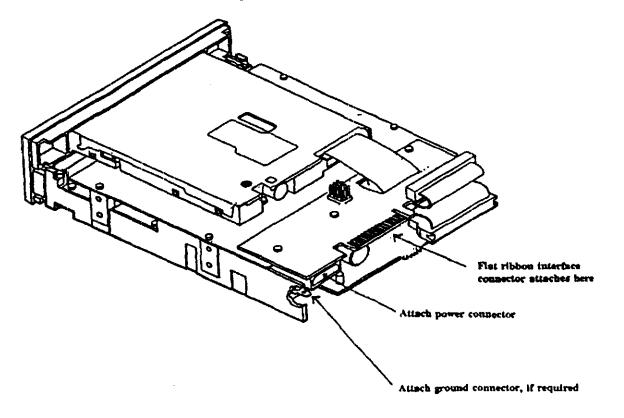


Slide drive into any available bay. We recommend you use the uppermost bay.

- Make sure the mounting rails are aligned into the mating slots.
- Locate your system's floppy drive ribbon cable. The cable may be keyed to assist with alignment. If yours is not keyed, it should be attached, so that the color strip (red or blue) on the data cable is aligned with the edge of the floppy drive data connector that has the key slot. This is Pin 1.

Reattach power connector.

- Replace the cover.
- Reattach all input and output devices.
- Plug in computer.



Trouble Shooting

Symptom	Solution
Indicator light never turns on when executing READ or WRITE	Make sure that the interface cable and power cable are properly connected and drive address strap is set correctly. Refer to Pages 4 & 5.
Indicator light comes on as soon as power is applied and stays on	The ribbon cable may be reversed. Check cable pin #1 orientation.
Drive type mismatch during boot	Check CMOS setup for correct drive type. If the indicator comes on, check for head recalibration to Track 00, if it doesn't, drive is bad.
Invalid media or Track 00 bad when formatting	Attempted to format an HD diskette to 720K or an DD diskette to 1.44MB, drive is not properly set in CMOS setup, or controller card is not configured correctly. Check setup by referring to controller documentation.
The same directory is displayed for different diskettes	The disk change signal is not being output. Check the drive for the correct disk change strap setting (DC jumper). Or Pin #34 on the ribbon cable is broken.
Drive not ready error reading drive x	No diskette inserted in the drive or motor not spinning. Call TEAC Tech Support.
General failure error reading drive x	Diskette not formatted, drive out of alignment, 720K disk formatted to 1.44MB, or 1.44MB disk formatted for 720K in the 3 1/2" drive.
Sector not found error	Head seek error or drive out of alignment. Call TEAC Tech Support.

TEAC Tech Support hot line: (323) 727-4860 8:30a.m. - 5:00p.m., PST. Otherwise, leave message on our voice mail, or fax the problem description to FAX (323) 869-8751 or EMAIL DSPDTSG@TEAC.COM

TEAC America, Inc., 7733 Telegraph Rd., Montebello, CA 90640

1. OUTLINE

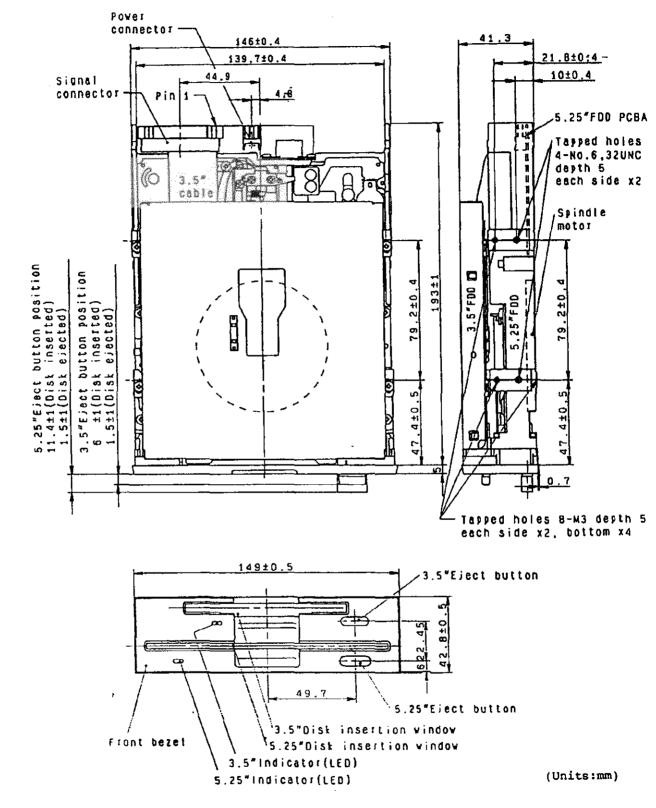
This specification provides a description for the TEAC FD-505, dual floppy disk drive. The FD-505 has two drives in the size of a conventional 41mm hight 5.25-inch drive (equivalent to the TEAC FD-55GF), one is 1 inch hight 5.25-inch mini floppy disk drive (1.6MB/1MB dual mode) and the other is 0.6 inch hight 3.5-inch micro floppy disk drive (2MB/1MB dual mode).

Tables 1-1 through 1-3 show the outline of the dual FDD, the 5.25" FDD, and the 3.5" FDD.

Model name, (Bare FDD)	FD-505 -1xx -2xx -3xx
Safety standard	UL, CSA & IEC950(CB)

LED indicator color	Green for both 5.25"/3.5" FDDs
Disk installation and ejection method	One action manual installation and one action manual ejection for both 5.25"/3.5" FDDs
Frame ground terminal	Not equipped.
Required power	$+5V \pm 5\%$ and $+12V \pm 10\%$
Signal output driver	Open collector TTL
Input signal terminator	$1k\Omega \pm 5$ % unremovable
Host interface connector	Applicable to the conectors of conventional 3.5" FDD.
Strap setting at delivery	5.25" FDD: 5D1, 3D2, 5M1, 3M2
Host interface signal pin assignment at delivery (Refer to item 8.2)	<pre>Pin 2 : HD IN input for 5.25" FDD, high density at high level (OPEN state for 3.5" FDD) Pin 4 : NO CONNECTION for 5.25"/3.5" FDDs Pin 6 : NO CONNECTION for 5.25"/3.5" FDDs Pin 10: MOTOR ON 2 input Pin 12: DRIVE SELECT 1 input Pin 14: DRIVE SELECT 2 input Pin 16: MOTOR ON 1 input Pin 16: MOTOR ON 1 input Pin 34: DISK CHANGE output for 5.25"/3.5" FDDs Others: The same as the conventional FDDs</pre>
Accessory	Not equipped.
Other optional function	Not equipped.

Dual FDD specification outline



FDD external view

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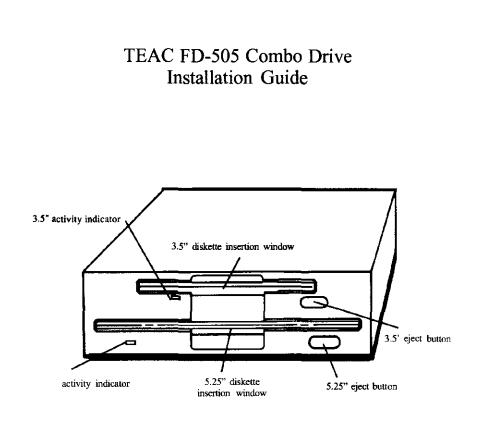
ENVIRONMENTAL CONDITIONS

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Note: The following requirements are applied for the unpackaged FDD.
(1) Ambient temperature
  (a) Operating
                   : 4 ~ 51.7°C(39 ~ 125°F)
  (b) Storage
                    : -22 - 60^{\circ}C(-8 - 140^{\circ}F)
  (c) Transportation: -40 ~ 65°C(-40 ~ 149°F)
(2) Temperature gradient
                   : 20°C(36°F) or less per hour
  (a) Operating
  (b) Storage and transportation
                    : 30°C(54°F) or less per hour
(3) Relative humidity
  (a) Operating
                    : 20 - 80% (no condensation)
                     Max. wet bulb temperature shall be 29.4°C(85°F)
  (b) Storage
                    : 5 - 90% (no condensation)
                      Max. wet bulb temperature shall be 40°C(104°F)
  (c) Transportation: 5 - 95% (no condensation)
                      Max. wet bulb temperature shall be 45°C(113°F)
(4) Vibration
                 : 1.0G or less (10 ~ 100Hz, loct/min. sweep rate)
  (a) Operating
                      0.35G or less (100 ~ 600Hz, loct/min. sweep rate)
  (b) Transportation: 2G or less (10 ~ 100Hz, 1/4oct/min. sweep rate)
(5) Shock
  (a) Operating
        Write & read: 5G (11msec, 1/2 sine wave) or less
        Read only : 10G (11msec, 1/2 sine wave) or less
                       Soft errors are allowed if they are recoverable
                      within three retries.
  (b) Transportation: 60G (11msec, 1/2 sine wave) or less
(6) Altitude (operating): -300m (-980 feet) ~ 5,000m (16,400 feet)
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RELIABILITY

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: 20,000 power on hours or more (for typical operation duty) (1) MTBF (2) MTTR : 35 minutes (3) Design component life: 5 years (4) Disk life : 3×10^6 passes/track or more (5) Disk insertion: 3×10^4 times or more (each for 5.25"/3.5" FDD) (6) Seek operation life : 1×10^7 random seeks or more (each for 5.25"/3.5" FDD) (7) Preventive maintenance: Not required (for typical operation duty) (8) Error rate (a) Soft error: 1 or less per 10⁹ bits read A soft (recoverable) error is defined that it can be read correctly within three retries. (b) Hard error: 1 or less per 10¹² bits read A hard (unrecoverable) error is defined that it cannot be read correctly within three retries. However, it is recommended to be followed by a recalibration to track 00 and four additional retries. (c) Seek error: 1 or less per 10⁶ seeks A seek error is defined that it can seek to a target track within one retry including a recalibration to track 00. (9) Safety standard: Complying with UL and CSA (10) Electro-static discharge test: 15kV (150pF, 330 Ω) or more No hard error and/or no component damage occur when the test is applied to the operator access area (front bezel area).



Your FD-505 package includes:

- D FD-505 Combo floppy disk drive
- ☑ One edge card adapter
- \blacksquare One power connector adapter
- ☑ Registration card/questionnaire
- ☑ Installation guide

Introduction

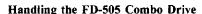
Thank you for purchasing the TEAC FD-505 Combo Floppy Disk Drive. This product is intended for use in IBM@ PC AT@ compatible computers. Upgrading IBM/AT systems requires Bastech driver installation. It allows you to expand the usefulness of your present computer by occupying one standard 5.25 inch computer bay, while providing 5.25 inch and 3.5 inch diskette compatibility. You can then utilize the other computer bay, normally occupied by a second floppy drive, for other peripherals, such as a CD-ROM, tape, or hard drive.

This quality drive will provide trouble-free operation for your computer system if properly installed. PLEASE READ THE ENTIRE INSTALLATION GUIDE THOROUGHLY BEFORE YOU BEGIN THE INSTALLATION. Use a high density controller with optional bios to support 3.5 inch high density drive, if this option is not available on your system bios. If you have questions or comments on the installation, please call TEAC Technical Support Center at the telephone number listed on the back page of this Guide.

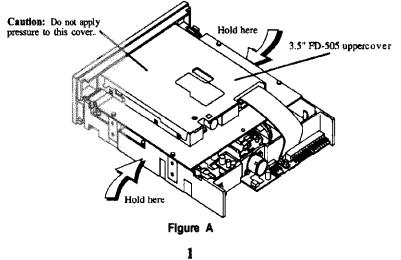
Tools You May Need

Depending on the design of your computer, you may need the following tools to complete the installation.

- a flat blade screwdriver
- a Phillips screwdriver
- needle-nosed pliers



Please avoid placing your fingers on the upper cover. It is best to hold the FD-505 by the diecast frame, as indicated by the arrows in Figure A.

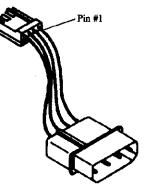


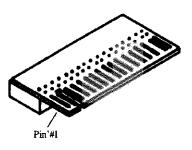
Preparing your Personal Computer for FD-505 Combo Drive Installation

CAUTION: TURN OFF YOUR COMPUTER AND UNPLUG IT FROM THE AC POWER SOURCE BEFORE INSTALLING THE FD-505. FAILURE TO DO SO MAY RESULT IN ELECTRIC SHOCK.

- 1. Unplug your computer.
- 2. Detach all input and output devices from your computer, such as printer, keyboard, monitor, etc.
- 3. Remove cover from your computer. Refer to your computer system manual for this procedure.
- 4. Note the two cables that are connected to your current floppy disk drives, as these same cables will be required to install your FD-505. The floppy interface cable is the flat "ribbon" type, and the power connector consists of the 4 separate wires attached to a single connector. See Figure B on next page.
- 5. Your system may also have a single ground wire attached to the floppy disk drive(s). Carefully remove all cables from your floppy disk drive(s).
- 6. Remove current floppy drive(s) from your system and install the FD-505.

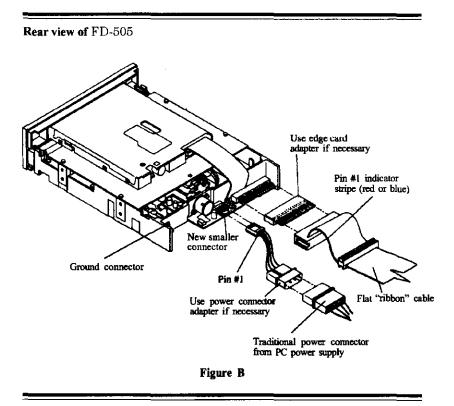
Note: The FD-505 comes with two optional pieces of hardware to assist you with correctly installing your Combo Drive. The two pieces are: a power connector adapter cable and an edge card adapter (see below).





Power Connector Adapter: You will need this adapter if your power supply cable does not have the smaller connector, like the one found on the FD-505 Combo Drive.

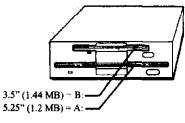
Edge Card Adapter: You will need this adapter if your interface cable has only the traditional edge card connector. The edge card connector is typically found on the 5.25 inch FDDs. However, if your cable has a pin header connector then you do not need this adapter.

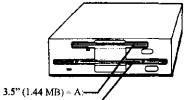


Configuring Drive A: and Drive B:

Your Combo Drive can be configured in two ways at the time of installation. You can choose either option.

Option #1 Drive A: = 5.25" (1.2 MB) Drive B: = 3.5" (1.44 MB) Option #2 Drive A: = 3.5" (1.44 MB) Drive B: = 5.25" (1.2 MB)



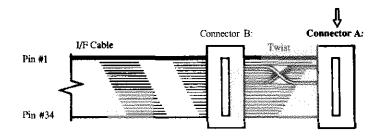


5.25" (1.2 MB) = B:

Configuring for Option #1:

Using an IBM PC compatible cable with a twist at the end connector (Figure C) and the factory default strap settings 1 (shown in Figure D).

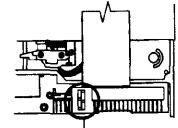
- a) Connect the FD-505 Combo drive to connector A: Connector A: is at the end of the cable as shown in the sketch.
- b) Set the jumpers as indicated in Figure D.
- c) Connect the ground cable if your system requires it.



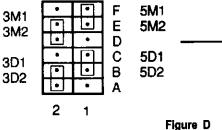


FD-505 Jumper Matrix Default strap settings 1:

AB 2 = 3D2 BC 1 = 5D1 DE 2 = 3M2 EF 1 = 5M1



Jumper Block



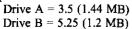
Configuring for Option #2:

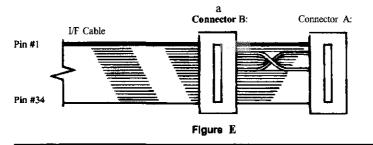
To reverse drive assignments using an IBM PC compatible cable (Figure E) with a twist at the end connector and the default strap settings.

- a) Connect the FD-505 Combo drive to **connector B**: (the untwisted connector). **Connector B**: is the connector to left of the end connector.
- b) Set the jumpers as indicated on previous page in Figure D.
- c) Connect the ground wire if your system requires it.

This will create the Option 2 drive assignments, namely:

Option #2





To create the Option #2 drive assignments USING THE CONNECTOR A:

a) Connect the FD-505 Combo drive to connector A:

b) Set the jumpers as indicated in Figure F, i.e. Strap setting 2.

c) Connect the ground wire if your system requires it.

Jumper

Block

FD-505 Jumper Matrix Strap settings 2:

AB 1 = 5D2



DE 1 = 5M2 EF 2 = 3M1



Figure F

5

J)

Notes on Installing Your FD-505

Slide drive into any available bay. We recommend you use the uppermost bay.

Make sure the mounting rails are aligned into the mating slots. (if rails are attached)

Locate your system's floppy drive ribbon cable. The cable may be keyed to assist with alignment. If yours is not keyed, it should be attached, so that the color strip (red or blue) faces the center of the drive (jumper block). This is Pin 1.

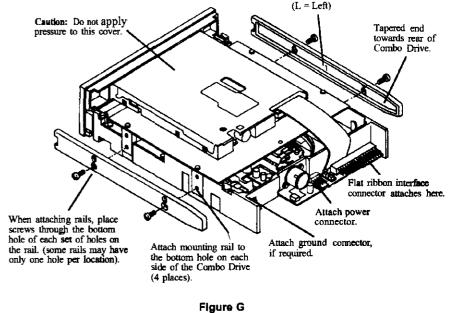
- 1. Reattach power connector.
- 2. Replace the cover.
- 3. Reattach all input and output devices.
- 4. Plug in computer.

Attaching Mounting Rails, if required

Your system may or may not require rails to mount the floppy drives. If rails are required, please call TEAC parts department and order rail kit for the FD-235. Tel: **323**, 726-0303 Ext. 840 (TEAC P/N: 10000000-60). Attach rails as shown in Figure G.

The tapered end of each rail, when mounted, should point toward the back of the floppy drive.

Note: Each rail is marked on the inside surface with "R" indicating the right rail or an "L" for the left rail.



Trouble Shooting

Make sure that the interface cable and power cable are properly connected and drive address strap is set correctly. The ribbon cable may be reversed. Check the pin #1 orientation. Check CMOS setup for correct drive type. If the indicator comes on, check for head recalibration to Track 00; if it doesn't, drive may be malfunctioning. Attempted to format an HD diskette to 720K or DD diskette to 1.44MB. Drive is not properly set in CMOS setup. Or controller card is not configured correctly.
Check the pin #1 orientation. Check CMOS setup for correct drive type. If the indicator comes on, check for head recalibration to Track 00; if it doesn't, drive may be malfunctioning. Attempted to format an HD diskette to 720K or DD diskette to 1.44MB. Drive is not properly set in CMOS setup. Or controller card is not configured correctly.
type. If the indicator comes on, check for head recalibration to Track 00; if it doesn't, drive may be malfunctioning. Attempted to format an HD diskette to 720K or DD diskette to 1.44MB. Drive is not properly set in CMOS setup. Or controller card is not configured correctly.
720K or DD diskette to 1.44MB. Drive is not properly set in CMOS setup. Or controller card is not configured correctly.
documentation. For IBM/AT upgrade, Bastech driver must also be installed.
Controller card is not receiving disk change signal. Check the drive for the correct disk change strap setting. Pin #34 on the ribbon cable is broken. Or disk drive is malfunctioning.
No diskette inserted in the drive or motor not spinning. Drive may need service.
Diskette not formatted. Drive out of alignment. LD or ND disk formatted to 1.44MB. HD disk formatted for 720K in the 3%" drive.
Head seek error or drive out of alignment.

TEAC America, Inc., 7733 Telegraph Rd., Montebello, CA 90640

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