

CHAPTER 3 OPERATOR'S GUIDE

3.1 INTRODUCTION

This chapter describes the function of all external controls on the RL01/RL02 disk drive and explains how to operate the subsystem.

3.2 CONTROLS AND INDICATORS

Figures 3-1 and 3-2 show all the drive controls and indicators.

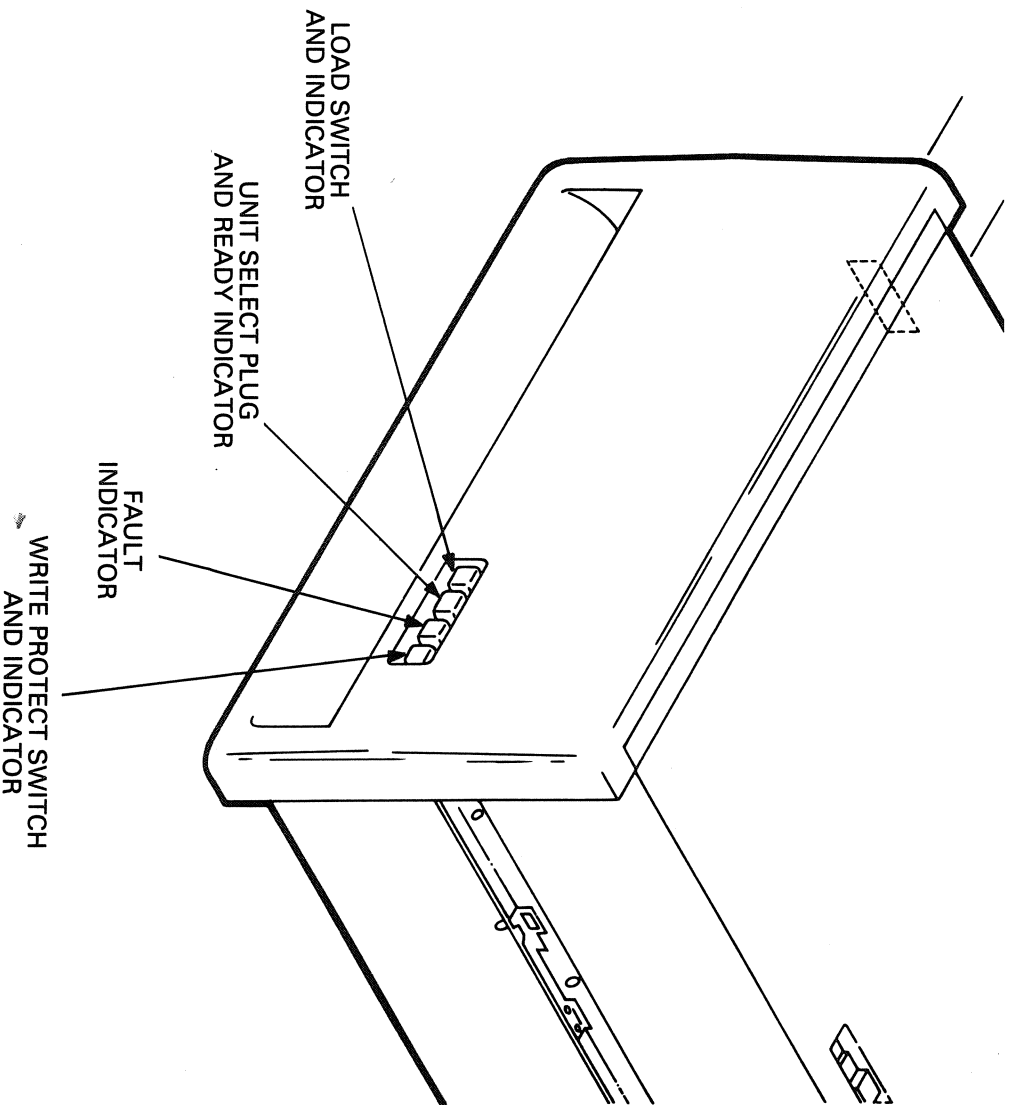
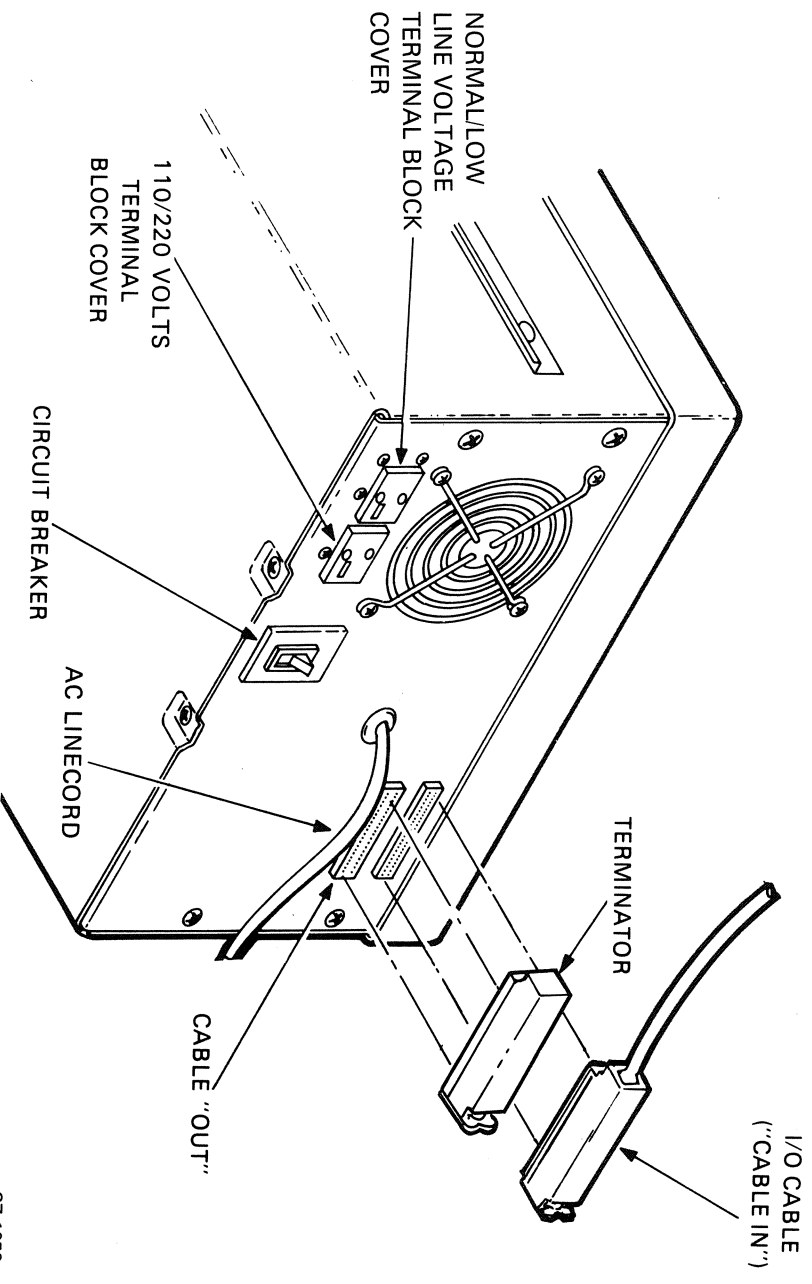


Figure 3-1 RL01/02 Disk Drive – Front View

CZ-1005



CZ-1056

Figure 3-2 RL01/02 Disk Drive – Rear View

3.2.1 Power ON/OFF Circuit Breaker

When the power plug is inserted into the proper ac outlet, ac power is applied to the rear panel circuit breaker on the drive. When the circuit breaker is switched ON, ac power is applied to the drive and the blower motor is energized.

3.2.2 Run/Stop Switch with LOAD Indicator

This push on/push off switch, when pressed in, energizes the spindle motor providing the following conditions have been met.

- The RL01K/RL02K cartridge has been installed.
- The cartridge protective cover is in place and the cartridge access door is closed.
- All ac and dc voltages are within specifications.
- The read/write heads are home (retracted).
- The brushes are home (newer drives have no brush assembly).

When this switch is released, the spindle drive motor is deenergized if the read/write heads are not loaded. If the heads are loaded, they are immediately retracted and the spindle drive motor is then deenergized. In the event of a main power interrupt and subsequent power restoration, the drive will cycle up if the switch is ON since it contains mechanical memory.

The LOAD indicator is illuminated whenever:

- The spindle is stopped,
- The read/write heads are home,
- The brushes are home (on drives so equipped),
- The spindle drive motor is not energized.

3.2.3 UNIT SELECT Switch with READY Indicator

The UNIT SELECT switch is a cam-operated switch that is actuated by inserting a numbered, cammed button. The switch contacts are binary encoded so the drive interface logic recognizes the UNIT SELECT number (0, 1, 2 or 3).

The UNIT SELECT indicator, when lit, indicates a drive READY condition. This condition exists when:

- The read/write heads are loaded,
- The heads are detented on a specific track.

3.2.4 FAULT Indicator

The FAULT indicator is lit whenever the following fault or error conditions develop in the disk drive:

- Drive-select error,
- Seek time-out error,
- Write current in heads (during sector time) error,
- Loss of system clock (this condition is not latched and not represented in status word),
- Write-protect error,
- Write data error,
- Spin error.

NOTE

Volume Check does not light the FAULT indicator but does cause DRIVE ERROR.

3.2.5 WRITE PROTECT Switch and Indicator

This push on/push off switch is used either to set the WRITE PROTECT condition if it has been reset or to reset the WRITE PROTECT condition if it has been set. The switch unit contains a light that is on when the WRITE PROTECT condition is set.

3.3 OPERATING PROCEDURES

This paragraph explains how to load a cartridge into a disk drive and how to cycle up the drive to put the subsystem on-line. The cycle-up procedure assumes that ac power is available, the drive ac circuit breaker is on (cooling fan is energized), system power is on, and the LOAD indicator on the drive control panel is on.

3.3.1 Cartridge Loading and Drive Startup Procedure

1. Raise the drive access cover.
2. Prepare a cartridge (Figure 3-3) for loading as follows.
 - a. Lift the cartridge by grasping the top cover handle with the right hand.
 - b. Support the cartridge with the left hand holding the protection cover.
 - c. Lower the top cover handle and push the handle slide to the left with the thumb of the right hand. Again, raise the handle to its full upright position to release the protection cover.
 - d. Lift the cartridge from the protection cover and carefully seat the cartridge on the spindle with the top cover handle recess facing the rear of the machine.
 - e. Carefully rotate the top cover handle back and forth to ensure that the spindle locating arms are seated properly within the cartridge housing detent slots.

CAUTION

Use care when seating the cartridge on the drive spindle. Rough handling of the cartridge may cause damage to the spindle/cartridge interface which, in turn, can cause excessive cartridge runout and positioning errors.

- f. Gently lower the top cover handle to a horizontal position to engage the cartridge on the drive spindle.
 - g. Place the protection cover on top of the cartridge.
 - h. Close the drive access cover.
3. Start the drive as follows.
 - a. Press the run/stop switch (LOAD indicator).
 - b. When the drive has completed the drive startup sequence and the read/write heads are detented on cylinder 0, the READY indicator on the numbered UNIT SELECT switch will be illuminated.
 - c. If write protection is desired, press the WRITE PROTECT switch.

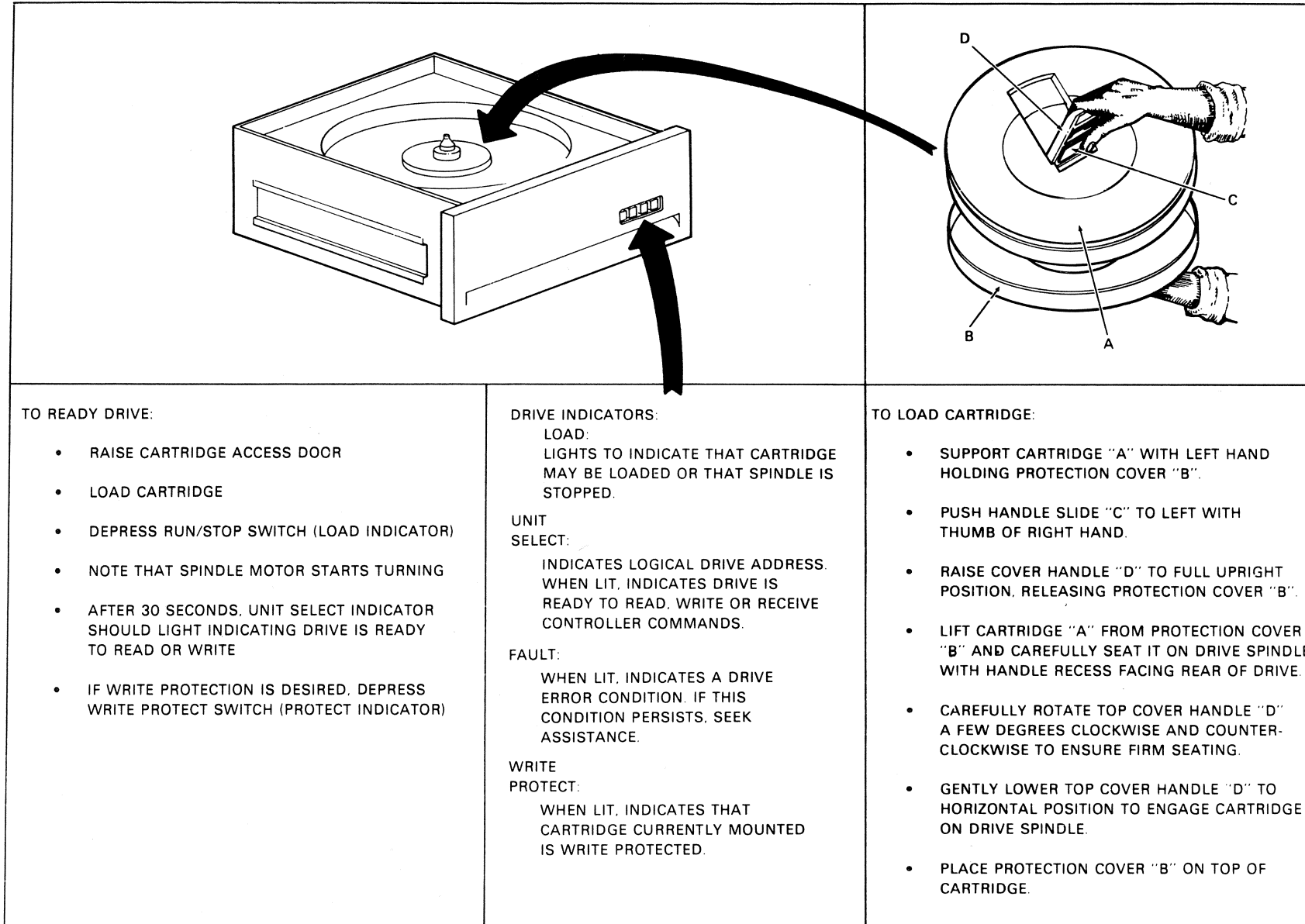


Figure 3-3 Cartridge Loading Procedure

3.3.2 Cartridge Unloading Procedure

1. Power down the drive as follows.
 - a. Press the run/stop switch and wait approximately 30 seconds for the LOAD indicator to illuminate.
 - b. Raise the drive access cover.
2. Remove the cartridge as follows.
 - a. Remove the cartridge protection cover and hold the cover in the left hand.
 - b. Push the top cover handle slide to the left with the thumb before raising the handle.
 - c. Raise the top cover handle to a full upright position to release the cartridge from the drive spindle.
 - d. Carefully lift the cartridge up and out of the drive and place it in the protection cover
 - e. Lower the top cover handle to the horizontal position to lock the protection cover in place.

3.4 OPERATOR MAINTENANCE

3.4.1 Introduction

User maintenance procedures are limited to the care and cleaning (external) of the disk cartridge and the cleaning of the drive spindle assemblies.

3.4.2 Professional Cartridge Cleaning

Cartridges should be professionally cleaned every six months or whenever practical. Complete cartridge cleaning procedures must be performed by a professional cleaning service. Application of cleaning procedures to the recording surfaces by unqualified personnel may void not only the warranty on the serviced cartridge, but the warranty for any drive on which the cartridge is operated.

3.4.3 User Cartridge Cleaning

The user should clean the outer sides of a completely assembled cartridge by using a lint-free wiper dampened with a solution of 9 percent water and 91 percent isopropyl alcohol. However, the cartridge must not be saturated and all excess solvent must be removed with a dry wiper. This procedure is necessary to prevent solvent from entering the seams of the assembly and contaminating the platter.

CAUTION

For cleaning purposes, use only a solution of 9 percent water with 91 percent isopropyl alcohol. Water, trichloroethylene, or other solvents are not permitted.

3.4.4 Spindle Assembly Cleaning

Using a lint-free wiper dampened with the isopropyl alcohol solution, clean the spindle cone prior to loading the cartridge. However, do not saturate the assembly; remove all excess solvent with a dry wiper. This procedure is necessary to prevent solvent from entering a loaded cartridge and contaminating the platter. In addition, ensure that the shroud is as free of lint and dust as possible before loading a cartridge. Dry lint and dust may be blown from the spindle area using filtered dry air. However, do not use manufacturing environment air that may contain water or oil; canned air is an acceptable substitute.

3.5 CARTRIDGE CARE SUMMARY

The following list summarizes care and cleaning considerations for an RL01K/RL02K disk cartridge.

- Keep cartridges clean.
- Use cartridges at computer room temperature only.
- Manipulate cartridges by the top cover handle only.
- When the protection cover is removed (for loading), do not touch disk surfaces, hub center cone, or surfaces.
- When the protection cover is removed (for loading), interior metal hub surfaces must be clean.
- When the protection cover is removed (for loading), ensure that the disks are not moved or rotated, since improper disk motion may generate plastic particles which can result in disk damage.
- When loading or unloading a drive, insert and remove cartridges gently. In addition, do not use excessive force when manipulating the top cover handle.
- If, during operation, a cartridge makes rumbling or continuous tinging sounds, discontinue use of the cartridge. Use of a damaged cartridge on other drives may damage the drives, resulting in additional damage to all other cartridges used in those drives.
- Each cartridge should be cleaned professionally every six months and/or whenever a specific cartridge is not operating properly.
- Cartridges are factory-repairable only. Disassembly in the field is not permitted, and such action may void the warranty on a cartridge, as well as any drive on which the cartridge may be operated.