<u>SUPPLEMENTARY INSTRUCTIONS FOR MAGNUM LOAD</u>

<u>INSTALLATION IN THE COMMODORE SX-64 COMPUTER</u>

!WARNING!- The following steps must be performed with care or damage to your computer may result. If you are not sure of your abilities, please find someone who is, as we cannot be responsible for any damage caused during the installation process. This is especially true if you are one of the few who has a computer that will require unsoldering of the old "KERNAL" chip prior to installation of the MAGNUM LOAD chip.

1. Turn "off" power to your computer system.

2. Disconnect all cables from your Commodore SX-64 computer.

3. Turn your computer around so that you are facing the back of it.

4. Locate the four Phillips-head screws on either edge of the rear panel. Remove the top three screws out of each group of four screws.

5. Slide the corrugated-plastic side trim strips out of the rear of the computer.

6. Remove the three, small Phillips-flathead screws on each side of the computer holding the top cover on.

7. Lift the top half of the computer off gently and set it aside for now.

8. Still facing the rear of the computer, locate the circuit board on the left side of the computer. It should be labelled "SX-64 CPU" along its top edge. Near the center of this board will be a 28-pin chip labelled "UD3". This chip is the "KERNAL" chip and should have a number similar to "251104-04R".

9. The old chip will probably be in a socket or it might be soldered directly to the circuit board. A socket is a black, rectangular piece of plastic the same overall size as the chip itself and is about 1/8 inch thick. If a socket is present, it will be visible immediately under the chip itself. If the chip is soldered directly to the circuit board, then proceed NOW to step 10. If the chip is not soldered, then using a small tool (such as a small, flat-bladed screwdriver) CAREFULLY AND GENTLY work the chip loose from its socket. It is best to lift one end slightly, then the other and continue alternating ends until the chip lifts out of its socket. Set the old chip aside. Proceed now to step 14.

10. Removing a chip that is soldered directly to the circuit board requires experience if possible damage to the circuit board is to be avoided. If you are not experienced, then PLEASE have someone who is remove the old chip for you.

    !WARNING!- Improper desoldering and removal of the old chip may result in damage to your computer. This should be done CAREFULLY only by a person EXPERIENCED in such matters.

    Desolder and remove the old chip at this time.

11. Clean any remaining solder out of the holes in the circuit board.

12. Install and solder a 24 pin IC socket oriented as outlined in step 14. The FRONTMOST four holes in the board where the old chip used to be MUST be empty.

13. Check for and remove any solder bridges (left from soldering the socket in place) on the bottom of the board.

14. As the new MAGNUM LOAD chip is only a 24-pin chip and the old chip had 28-pins, it is IMPERATIVE that the new chip be positioned correctly in the old socket. The MAGNUM LOAD chip MUST be installed with its notched end pointing toward the FRONT of the computer AND its pins in the REARMOST 24 holes of the 28-pin socket. This MUST leave the FRONTMOST 4 holes in the socket EMPTY.

15. CAREFULLY AND GENTLY insert the MAGNUM LOAD chip into the old socket oriented as outlined in step 15. Firmly work it (rocking it slightly end-to-end) into the old socket. BE CAREFUL NOT TO BEND ANY OF THE PINS DURING INSTALLATION. After the chip is installed, double check that the notched end (the notched end MAY also be identified by a red mark on the paper label on top of the chip) points towards the FRONT of the computer and NONE of the pins missed their respective socket holes.

16. By reversing steps 2-7, reassemble your computer.

17. Turn "on" your computer system. The standard startup message should be present on your monitor screen. If not, IMMEDIATELY turn "off" your computer and triple check your installation job. If all is well, proceed to the "operating instructions" section of the main instruction sheet.

INSTALLATION IN THE COMMODORE 64 COMPUTER

!WARNING!- The following steps must be performed with care or damage to your computer may result. If you are not sure of your abilities, please find someone who is, as we cannot be responsible for any damage caused during the installation process. This is especially true if you are one of the few who has a computer that will require unsoldering of the old "KERNAL" chip prior to installation of the MAGNUM LOAD chip.

1. Turn "off" power to your computer system.

2. Disconnect all cables from your Commodore 64 computer.

3. Turn your computer upside-down on a soft work surface such as a towel.

4. Using a #2 Philips screwdriver, remove the 3 Philips-head screws in the bottom of the case.

5. Carefully turn the computer back over so that it is now right-side up again and facing you normally.

6. Lift the top half of the computer off gently (do not pull on the connecting wires).

7. Using something like masking tape or transparent tape mark the orientation of the 2 plugs (at the ends of the wires connected to the top half of the computer) where they connect to the circuit board. This will ensure proper reconnection later.

8. Carefully remove the 2 plugs referred to in step 7.

9. Set the top of the computer aside for now.

10. If your computer has a shiny, foil shield, carefully lift the back edge of it up and away from the circuit board. If instead your computer has a perforated, rigid-metal shield, remove the 5 attaching screws and carefully lift it off.

11. Locate the chip that is fourth-from-the-left at the rear of the computer. The circuit board is marked "U4" at that location. The chip itself has 24 pins and will be marked either 901227-01, 901227-02 or 901227-03. Please note that the notch at one end of the chip is oriented towards the REAR of the computer. The new chip MUST be oriented the same way.

12. The old chip will either be in a socket or it will be soldered directly to the circuit board. A socket is a black, rectangular piece of plastic the same overall size as the chip itself and is about 1/8 inch thick. If a socket is present, it will be visible immediately under the chip itself. If the chip is soldered directly to the circuit board, then proceed NOW to step 15. If the chip is not soldered, then using a small tool (such as a small, flat-bladed screwdriver) CAREFULLY AND GENTLY work the chip loose from its socket. It is best to lift one end slightly, then the other and continue alternating ends until the chip lifts out of its socket. Set the old chip aside.

13. Turn the MAGNUM LOAD chip so that its pins point down and the notched end points towards the REAR of the computer (the notched end may also be identified by a red mark on the paper label on top of the chip).

14. CAREFULLY AND GENTLY insert the MAGNUM LOAD chip into the old socket. Firmly work it (rocking it slightly end-to-end) into the old socket. BE CAREFUL NOT TO BEND ANY OF THE PINS DURING INSTALLATION. After the chip is installed, double check that the notched end points towards the REAR of the computer and NONE of the pins missed their respective sockets. Proceed NOW to step 20.

15. Removing a chip that is soldered directly to the circuit board requires experience if possible damage to the circuit board is to be avoided. If you are not experienced, then PLEASE have someone who is remove the old chip for you.

    !WARNING!- Improper desoldering and removal of the old chip may result in damage to your computer. This should be done CAREFULLY only by a person EXPERIENCED in such matters.

    Desolder and remove the old chip at this time.

16. Clean any remaining solder out of the holes in the circuit board.

17. Install and solder a 24 pin IC socket where the old chip was removed.

18. After checking for and removing any solder bridges (left from soldering the socket in place) on the bottom of the board, turn the MAGNUM LOAD chip so that its pins point down and the notched end points towards the rear of the computer (the notched end may also be identified by a red mark on the paper label on top of the chip).

19. CAREFULLY AND GENTLY insert the MAGNUM LOAD chip into the old socket. Firmly work it (rocking it slightly end-to-end) into the old socket. BE CAREFUL NOT TO BEND ANY OF THE PINS DURING INSTALLATION. After the chip is installed, double check that the notched end points towards the rear of the computer and none of the pins missed their respective sockets.

20. By reversing steps 2-10, reassemble your computer.

21. Turn "on" your computer system. The standard startup message should be present on your monitor screen. If not, IMMEDIATELY turn "off" your computer and triple check your installation job. If all is well, proceed to the "operating instructions" section below.

OPERATING INSTRUCTIONS

1. When powered "on" normally, the MAGNUM LOAD chip defaults to the old 1541 slow-load routines. In this mode the chip is "transparent" and may be used just like the old chip.

2. The MAGNUM LOAD routines reside in place of the old cassette routines, hence the datasette can no longer be used with the new chip. Since the datasette routines have been removed from MAGNUM LOAD, any attempt to use them will result in an "error". MAGNUM LOAD can be turned "on" in either of two ways:
   a. When turning "on" or resetting (if you have a reset button) the computer, hold down the "F1" function key until the startup screen appears. "MAGNUM LOAD" will appear on your monitor screen indicating the fast loading and verifying routines are running.

   b. With the computer "on", type in the following and press the [RETURN] key:

      SYS64639

"MAGNUM LOAD" will appear on your monitor screen indicating the fast loading and verifying routines are running.

3. You may now load a program as you normally would, and it should load at high speed.

   Note: MAGNUM LOAD loads program files at high speed. Other file types will be loaded at normal speed and programs that are "block read" will load only slightly faster.

4. If you experience trouble loading a program at high speed, then disable the fast load routines by either turning the computer "off" and back "on", pressing the reset button (if you have one) or typing in the following and pressing the [RETURN] key:

      SYS64738

You can now load the program normally.

5. For your convenience, the first BASIC or autoboot program on a diskette can be loaded and run by simply HOLDING down the left [SHIFT] key, tapping the [RUN] key and then releasing the [SHIFT] key. It has been found that this will work at least 90% of the time.

6. To prevent the head in your 1541 disk drive from rattling on most types of copy-protection "errors", type in the following and press the [RETURN] key:

      SYS63993

   Note: This feature is not implemented in the MSD version of MAGNUM LOAD as it is not required for the MSD disk drive.

   If you turn power to your disk drive or computer "off" and back "on" (thereby resetting the disk drive), or in any other way reset the disk drive, the above procedure will have to be repeated.

7. Since the default device number has been changed in the MAGNUM LOAD chip to #8, shorthand commands may be used such as LOAD"$ to load a diskette directory.

8. In the MSD version of the MAGNUM LOAD chip is an "unnew" routine for restoring BASIC programs that have been accidentally or otherwise "erased" using the "NEW" command. To use this feature, type in the following and press the [RETURN] key:

      SYS64413

You should find that your BASIC program is now restored, and you can LIST and RUN it normally.

9. Additional notes for programmers:

      a. To enable MAGNUM LOAD - POKE146,255

      b. To disable MAGNUM LOAD - POKE146,0