Congratulations on your purchase of the Sonographe model SD22 compact disc player. You have acquired one of the finest pieces of music reproduction equipment available today. The SD22 was designed to provide audiophiles with a reference quality CD player capable of accurately reproducing the dynamics, tonalities and textures of a live musical performance. The design and materials have been carefully selected to yield years of unvarying excellence.

Please take a few minutes to read this manual so that you will better understand the features and capabilities of your SD22.

LIMITED WARRANTY FOR THE Sonographe SD22

1. **conrad-johnson design, inc.** warrants to the original purchaser that the Sonographe SD22 will be free of defects in materials and workmanship for a period of one year from the date of original purchase.

2. During the warranty period, conrad-johnson will repair defective units without charge for labor or parts subject to the following conditions:
    a) The unit must not have been altered or damaged through misuse, abuse, negligence, accident, or improper operation.
    b) The purchaser must provide evidence of purchase at the time service is requested.
    c) All repairs must be undertaken at the factory or other service center designated by conrad-johnson design, inc. Units submitted for warranty repairs must be shipped in the factory packing carton to conrad-johnson design or its designated service center, freight and insurance prepaid by the owner, and will be returned to the owner, freight and insurance prepaid by conrad-johnson design.   Replacement cartons are available from the factory for a nominal charge.
    d) Normal wear and maintenance are not covered by this warranty.

3. Where permitted by law, conrad-johnson design's liability shall be limited to that set forth in this warranty. No other warranty of any kind, expressed or implied, is made by conrad- johnson design, inc., and all implied warranties, including merchantability and fitness for a particular "purpose", which exceed the obligations and time limits set forth herein are hereby disclaimed. conrad-johnson design, inc. shall not be liable for incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you.

4. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Questions about warranty service should be addressed to:

> Service Department
> conrad-johnson design, inc.
> 2733 Merrilee Drive
> Fairfax, VA 22031

REGISTERING THE WARRANTY

Please return the enclosed card to the factory within 30 days of purchase to register the warranty.

INSTALLATION

The unit should be mounted horizontally on a flat hard surface. To minimize hum pickup, keep the unit well away from the power amplifier, and route power cords away from input cables.

The SD22 requires an ac power line providing between 108 and 125 volts at 50 to 60 Hz. Alternatively, the SD22 can be converted for operation on 220 volt power lines. Consult your dealer for details about the conversion.

CONNECTION

OUT R,L: Connect these outputs to any line-level input on your preamplifier, integrated amplifier, or receiver.

IMPORTANT NOTE: The circuit design of the SD22 results in lower output amplitude than most CD players - about 10 dB less. This is not a problem with nearly any preamplifier, but will make the SD22 incompatible with "passive" control units (which have no gain circuitry) unless included in a system with a very sensitive amplifier and high efficiency speakers. The only effect on a typical system with preamplifier, integrated amp, or receiver, is that it will operate with the volume control at a higher setting to produce the same sound level.

CONTROLS

The controls function in two modes of operation: direct mode, and programming mode. Also, some of the controls appear only on the remote handset.

THE CD CONTROLS -- DIRECT MODE

OFF/ON: This is the main power switch for the CD player.

PLAY/REPLAY: Pressing this button starts playing the chosen CD track. If you are already playing a cd, pressing this button will take you back to the beginning of the track being played.

PAUSE: This button interrupts play. To resume play, press the button a second time.

STOP/CM: This button is used to stop play during playback.

NEXT: This is used for indicating the track you want to begin with, and for moving on to a later track number during play. Press this button till the desired track number appears on the TRACK display, then press PLAY. This (and PREVIOUS) will also function when play has been paused.

PREVIOUS: This button is the same as the NEXT button except that it works in the opposite direction, returning to the previous track when used during play.

PROGRAM: For storing the track numbers of a program and producing a display of the program stored-see section on programming.

O/C: Opens and closes the CD loading drawer.

THE REMOTE CONTROL

With the exception of ON/OFF, the preceding controls are duplicated on the remote control handset. NEXT and PREVIOUS controls are accessed by arrow keys labeled TRACK. The following additional controls are only available on the remote control:

REPEAT: Pressing this button will repeat the disc continously until you press the repeat button again, or the O/C button.

RANDOM: Plays selections in random order.

INDEX: This pair of arrow keys accesses the next or the previous index number if the current track has index numbers.

SEARCH: This pair of arrow keys allows rapid search playing forward and back. During search, the laser pick-up moves at three different speeds: for the first few seconds relatively slowly, thereafter faster, and

then maximum speed is reached after approximately ten seconds (if you continue to hold down the button). At the first two speeds the sound remains audible, unless you also press PAUSE; after that it is inaudible.

A/B: sets the starting and ending points of a passage to be repeated.

NUMBER KEYS 0-9: These keys can be used for direct selection of another track during play, a track to begin play with, and tracks for a program. Two figure numbers (eg. 03) must be entered within two seconds.

PROGRAMMING MODE:

Creating and Storing a Program: With a CD in the machine, press NEXT or PREVIOUS until the first number you wish to program appears under TRACK on the display - or enter the track number directly with the numeric keypad on the remote control (remember that track numbers must be entered as two digit numbers, and that both digits must be entered within 2 seconds). Press PROGRAM within 7 seconds. A **P** will now appear after the track number, indicating that the selected track has been stored. In the same way, select subsequent tracks and store each track by pressing PROGRAM.

Playing the Program: Press PLAY/REPLAY to play your program. The play indicator triangle will light, and play will begin with the first programmed selection. All controls except RANDOM and A/B can be used during the program playback.

Checking the Program: Press PROGRAM before, during, or after programmed play. The REVIEW indicator will light, and the track numbers will be displayed in sequence.

Erasing a Program: Press STOP/CM twice, or if play has already stopped, press once. Pressing O/C will also clear the program.

Erasing One Track from a Program: Using NEXT and PREVIOUS, or the numeric key pad, select the track to be erased from the program. Press PROGRAM within 7 seconds. The **P** after the track number will change to **C** (for CLEAR) and the track will be removed from the program.

*T*HE DISPLAY

This functions as an on/off, stand-by, pause and error indicator; during play, indicates which track is being played and the elapsed time; can also show the total number of tracks and the total playing time of the disc; when programming, it is used to indicate the track numbers to be stored and to display the numbers already stored.

On/Off indication: As soon as the player is switched on, the 8 and 12 display shows '--' at the TRACK portion of the display. The display goes off when the player is switched off.

Standby indication: At the moment that the disc tray closes, the 8 and 12 cm indicators begin to flash alternately indicating that the player is scanning the contents list on the disc. The indication keeps flashing until this is completed.

Pause indication: When play is paused, the illuminated triangle indicating play will flash.

Error indication: If, in operating or programming the player, you make a mistake, the warning ERROR appears for a short time.

Track Number Indication: As play progresses, the numbers of the tracks will be shown under TRACK.

Elapsed Playing Time Indication: The elapsed playing time of the current track appears in minutes and seconds as '0.00'-'0.01'- '0.02' etc.

Number of tracks indication: When the disc tray is closed with the O/C button, the highest track number of the disc appears under TRACK; for example, '14', when the disc has 14 tracks. The display will indicate +20 if the disc has more than 20 tracks.

Total Playing Time Indication: When the disc tray is closed, the total playing time of the cd appears in minutes and seconds; for example, '59.17'.

Random: lights up if the tracks on the cd are to be played in random order.

Repeat: lights up if you elect to repeat a cd or a program.

Review: lights up when you check a program.

8 and 12: indicate the size in centimeters of the inserted cd.

*G*ETTING THE MOST FROM YOUR SD22

The Sonographe SD22 offers an unparalleled level of sophistication and refinement in music reproduction, but it cannot transform an inferior stereo system. Only high quality amplifiers and loudspeaker systems will be capable of fully revealing the capabilities of this precision instrument.

Interconnect and speaker wires are an important element in your stereo system. Interconnects are available which will permit a reference quality system to blossom and fulfill its promise of musical reality. Others will strangle the system to the point where it becomes no better than average. To complicate matters, our experience suggests that the choice of interconnects will be system dependent - those that are ranked first on a given system may be a poor choice for a different system. Consult your conrad-johnson dealer for recommendations for your specific system.

TROUBLESHOOTING GUIDE

Although the greatest care has been taken in the manufacture of this CD player, the possibility reamins that a fault could appear or that for some reason the player fails to function to your complete satisfaction.

To save you unnecessary calls on your dealer or our service department, we have compiled a list of possible faults and their causes.

1. After pressing the O/C button, the drawer does not slide in or out:
   a. The player is not switched on. Check to see that the display is lit.
   b. The microprocessor has not received the command properly. Check to see if the tray slides out if you switch the player off and on again, then press O/C again.
   c. The tray drive is not functioning. YOU CAN'T FIX THIS YOURSELF. Return to conrad-johnson for servicing.

2. After closing the tray the error light comes on rather than the track display:
   a. This disc is not inserted with the label upwards or there is no disc in the tray. Check to see that the disc is present and properly inserted.
   b. The disc is dirty or defective. Examine the disc.
   c. A piece of foreign matter is on the disc turntable or the laser lens. Return to conrad-johnson for service.

3. Programming is not working:
   a. The microprocessor has not processed the commands properly. Erase the program by pressing the O/C button and store it again; restart play and check to see if the fault has cleared.
   b. All 20 memory places have been filled and you missed the 'ERR' sign that indicates this. Check this by pressing PROG and counting the number of tracks displayed.

SD22 SPECIFICATIONS

Output: .640V
Hum and noise(20Hz-20KHz): 90dB below .640V
Distortion: less than .1%
Response: 5Hz-19kHz +/- .5dB
Phase: phase inverting
D/A Conversion: Bitstream, 256 x oversampling, 1 bit
Dimensions: 16.625"W x 3.75"H x 11.25"D
Weight: 12 lbs.

SERVICE

In the event your Sonographe SD22 cd player requires service,repack it with the original packing material and ship via United Parcel Service (UPS) to:

> Service Department
> conrad-johnson design, inc.
> 2733 Merrilee Drive
> Fairfax, VA 22031

Be sure to include a copy of your sales receipt from the original purchase, along with a note explaining the problem you are having in as much detail as possible. If the problem is intermittent, please indicate. If you do not have the original packing material, replacements are available from conrad-johnson design for a nominal charge.