

Congratulations on your purchase of the conrad-johnson model DF1 compact disc player and preamplifier. In it, you have acquired one of the finest pieces of music reproduction equipment available today. The DF1 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 DF1. NOTE THAT THE DF1 LINE STAGE IS PHASE INVERTING. See the section entitled "Getting the most from your DF1" for details on correct hookup to your system.

PLEASE NOTE THAT THIS UNIT HAS TRANSIT SCREWS ON THE BOTTOM WHICH MUST BE REMOVED BEFORE ANY ATTEMPT IS MADE TO PLAY THE MACHINE. THEY ARE THE TWO SCREWS WITH RED LABELS AROUND THEM.

LIMITED WARRANTY FOR THE conrad-johnson DF1

1. **conrad-johnson design, inc.** warrants to the original purchaser that the conrad-johnson DF1 will be free of defects in materials and workmanship for a period of 2 years 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.

I **INSTALLATION**

The unit should be mounted horizontally on a flat hard surface so that the ventilation holes in the bottom are unobstructed. At least one inch of clearance should be provided above the unit and the cabinet or shelf should be open at the back. To minimize hum pickup, keep the unit well away from the power amplifier, and route power cords away from input cables.

The DF1 requires an ac power line providing between 108 and 125 volts at 50 to 60 Hz. Alternatively, the DF1 can be converted for operation on 220 volt power lines. Consult your dealer for details about the conversion.

CONNECTION

On the back of the DF1 are 4 sets of left and right phono jacks. They are:

AUX: The AUX input allows you to use another source such as a tuner through the preamplifier section of the DF1. This connection can also be used to connect a switching unit should additional switching capability be desired.

TAPE IN: The TAPE IN allows you to feed the output of a tape deck through the preamplifier section of the DF1. If no tape deck is used, the TAPE IN jack may be used as another high level input. The AUX and TAPE IN inputs are electrically equivalent, and present a 50 Kohm load to the source. Alternately, this jack may also be connected to the output of external tone controls, a switching box, or external processor.

TAPE OUT/CD DIRECT: This output feeds a direct line level signal from the DF1 to the input(Record) jacks on your tape recorder. This output signal is not affected by the level control. Connect to the inputs of your tape recorder or external processors. You may also connect this output to a different preamplifier, bypassing the preamp section of the DF1, treating the DF1 strictly as a CD player. **NOTE THAT THE SIGNAL AT THIS OUTPUT IS PHASE CORRECT (NON INVERTING)**

MAIN OUT: Connect this output to the input of your amplifier(or cross-over in a bi-amped system). We recommend the use of an amplifier with an input impedance of 10k ohms or higher. Since the DF1 preamp section inverts phase, it may be necessary to invert the speaker leads to maintain correct phase. See the section on "Getting the most out of your DF1" for an explanation of this.

USE OF EXTERNAL TONE CONTROLS OR OTHER EXTERNAL SIGNAL PROCESSING DEVICES: Connect the output of the tone controls or external signal processing device to the TAPE IN jacks. The input to the tone control or external device should be connected to the TAPE OUT/CD DIRECT output on the DF1 The MONITOR position of the monitor/source switch inserts the external device into the circuit; the SOURCE position removes the external device from the circuit.

*C*ONTROLS

The controls are divided into three categories: the preamp controls, the cd controls in direct mode, and the cd controls in programming mode. Note that two position buttons are indicated by a / between the two functions.

PREAMP CONTROLS

LEVEL: The level control is an extremely precise potentiometer which controls the level fed to the main outputs of the DF1.

CD/AUX : This button is used to select either the CD player or the AUX input.

SOURCE/MON : This button is used to monitor the output of your tape deck or signal processor when in the MONITOR position. When in the SOURCE position the CD/AUX button selects the source.

THE CD CONTROLS -- DIRECT MODE

OFF/ON : This turns the CD player on and off. The preamp section stays on continuously, drawing less than 5 watts. Should you wish to completely shut down your DF1, unplug it from the wall socket.

PLAY : Pressing this button starts playing the chosen CD. 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, or press PLAY.

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

> : This button allows you to fast search forward.

< : This button allows you to fast search backwards. 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.

NEXT : This is used for indicating the track and- where applicable- index number you want to begin with, and for moving on to a later track or index number during play. Press this button till the desired track number appears on the TRACK display, then hit PLAY. To select a index number, first select the track number, then press the TIME/TRACK button. You now have 2 seconds to enter the index number. If you exceed this time, play starts again with the track and index number shown on the display. If you make a mistake and choose an index number that is too high, the 'ERR' sign appears and then play begins with the first index number on the track. You may be in pause mode while using this button.

PREV : This button is the same as the NEXT button except that it works in the opposite direction ; and returns to a previous track or index number when used during play.

TIME/TRACK : This button toggles between the elapsed time mode and the track number mode for the LED display. Front panel LEDs indicate which mode is active.

PROG : For storing the track numbers of a program and producing a display of the program stored-see next section.

O/C : Opens and closes the CD loading drawer. Note that to remove a disc while in play this button must be hit twice-once to stop the player and once to open the drawer.

REPEAT : This control appears only on your remote control handset, not on the player itself. Pressing this button will repeat the disc continuously until you press the repeat button again, or the O/C button.

THE CD CONTROLS -- PROGRAMMING MODE:

NEXT : This button is used to select the track you wish to program into the machine. Each push will take you to the next track number.

PREV : This button is the same as the NEXT button, except that each push takes you to the previous track.

PROG : This button is used to program a particular selection into the memory of the DF1. This button must be pressed within 5 seconds of selecting a particular track using the NEXT or PREV buttons. During this period a dot will flash next to the selected track number, if you run out of time it will light continuously. You can reactivate a missed track number by bringing up either the previous or the following track and then returning immediately to the one desired. This button is also used to clear a wrong selection as explained in the example below. The last function is to check the contents of a previously entered program. This can be done during or after you have finished programming, by pressing the PROG button. All the track numbers then appear in the programmed sequence, after which the last stored number is once again displayed.

O/C : During programming, the O/C button erases the whole program. Note that after playing a programmed disc, the program remains in memory until the O/C button is pressed. You may replay the program by pressing PLAY.

REPEAT : This button, which only appears on the remote control, will repeat the programmed selections continuously until either the REPEAT or O/C buttons are pressed.

PROGRAMMING EXAMPLE:

From a disc containing 14 tracks, let's assume that you wish to listen to tracks 7, 3, 9, 5, 12, and 10 in that order. Load the disc in the tray and

close the tray using the O/C button. Note that the number '14' appears in the track display.

Now press the NEXT button until '7' appears and then press the PROG button. The flashing dot after the figure will go off and the little dash at the right of the display will be replaced by 'P' as a sign that the track has been stored; you now read '7P'.

Continue by going back to '3' using the PREV button and press the PROG button again; you now read '3P'. You display the remaining tracks in turn by pressing NEXT or PREV, and then store them progressively by pressing PROG. As soon as you have stored the last track number you will see '10P'. This remains until play is started.

If you make a mistake and store a wrong track number, you can rectify this by going to the previous or following number, returning to the wrong one and then pressing the PROG button again. To show that a wrong track number has been erased, the 'P' after it is replaced by a 'C' (Clear).

Using our example: you have stored '4' instead of '5'. You go back to '3' using the PREV button, return to '4' using the NEXT button and then press the PROG button. You will then read '4C'. Now proceed with storing '5'.

THE REMOTE CONTROL HANDSET:

When the player is switched on, and the disc is in place, all the functions of the player can be operated using the remote control handset, except opening the disc tray. The remote control handset works up to a distance of approximately 25 feet. Note that the 'REPEAT' button appears only on the remote, not on the DF1 itself.

***T*HE LED DISPLAY**

This functions as an on/off, stand-by, pause and error indicator; during play, indicates which track is being played or the elapsed time; can also show the total number of tracks or 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 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 indication '--' starts to flash as a sign that the player is scanning the contents list on the disc. The indication keeps flashing until this is completed.

Pause indication: Pressing the pause button leads to the sequential lighting of four dots. As soon as the pause is lifted, this indication goes off.

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

Track Number Indication: As play progresses, the numbers of the tracks will be shown as '1.01', '2.01', etc., under TRACK/INDEX. The numbers under INDEX will only change if the different parts of a track have index numbers; this is indicated in the contents list in the disc-holder. They jump to '.02', '.03', etc., at the moment the next index number is reached.

Elapsed Playing Time Indication: When you have pressed the TIME/TRACK button, the count down of the pause, before each track, will be shown in seconds above TIME; for example 'P.02'- 'P.01'-'P.00'. Immediately thereafter, the elapsed playing time of the 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.

Total Playing Time Indication: If you want to know the total playing time of a disc, you close the tray with the O/C button and press the TIME/TRACK button. Above TIME, the total playing time then appears in minutes and seconds; for example, '59.17'.

***G*ETTING THE MOST FROM YOUR DF1**

The Conrad-Johnson DF1 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.

Given a system of high quality components, there remain a number of important details which must be attended to.

ABSOLUTE PHASE

Musical notes are heard through the ear's response to waves of alternating rise and fall of air pressure. Musical transients are exclusively positive: that is, the initial effect is a rise in pressure. The ear is capable of distinguishing these positive transients from the musically unnatural alternative of a negative transient (an initial fall in air pressure). In terms of your stereo system, these transients are created by your loudspeakers. If the speakers respond to musical transients by first moving out, they are creating a rise in pressure, and the system is said to be "phase correct". If they respond by moving in, they create a fall in pressure and the system is said to be phase inverting. Each component in the stereo system is either phase correct or phase inverting (including the source and speakers—these are normally phase correct). It is of no consequence if an individual component is phase inverting, as long as the system as a whole is phase correct. This will be the case as long as the number of phase inversions is even (or zero).

THE DF1 LINE STAGE (PREAMPLIFIER-MAIN OUTS) IS PHASE INVERTING. THE DF1 DIRECT (TAPE) OUTPUT IS PHASE CORRECT. If your system has an odd number of inversions, then you must add one phase inversion. This will be the case if the DF1 is the only unit in the chain that inverts phase. THIS IS CONVENIENTLY DONE BY REVERSING THE POSITIVE AND NEGATIVE CONNECTIONS TO YOUR SPEAKERS (be sure to reverse both channels).

If you are not sure about the phase of every piece in your system, you can establish correct absolute phase by careful listening. When the system is in correct phase, transients will be noticeably cleaner and more sharply defined. The effect is especially apparent on plucked string

sounds. A final warning-not all recordings are phase correct (including some "audiophile" recordings), so listen to several before concluding your investigation of absolute phase.

AC LINE POLARITY

Each piece of electronic equipment in your system is subject to minute ac leakage currents to the chassis. Since the chassis of components in a system are usually connected via the ground side of the interconnect wires, these leakage currents are superimposed on the musical signals. It is possible to minimize these current flows by carefully selecting the way in which each component is plugged into the wall outlet. Because the power cord on the DF1 is not polarized, it can be plugged in two ways. It will normally sound better in one orientation than in the other. The same will be true of any electronic device in your system.

THE IMPORTANCE OF WIRES

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 remains 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 transit screws have not been removed. Remove the transit screw.
 - b. The player is not switched on. Check to see that the display is lit.
 - c. 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.
 - d. 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.

DF1 SPECIFICATIONS

Preamplifier Section (MAIN OUT):

Gain: 26dB

Main Output: Maximum 5V

Phase: preamplifier section inverts phase of all inputs

Response: bandpass 5Hz to more than 100 KHz

Hum and noise(20Hz-20KHz): 82dB below 1.0V output

Distortion: less than .25% at rated output

Output impedance: less than 200 ohms

CD Player (DIRECT OUT):

Output: 1.1V

Hum and noise(20Hz-20KHz): 85dB below 1.0V

Distortion: less than .25%

Response: 5Hz-19kHz +/- .5dB

D/A Conversion: 16 Bit resolution with 176.4 kHz sampling, digital filtering

Mechanical:

Dimensions: 19"W x 3.75"H x 12."D

Weight: 19 lbs.

SERVICE

In the event your conrad-johnson DF1 cd player/preamplifier 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.