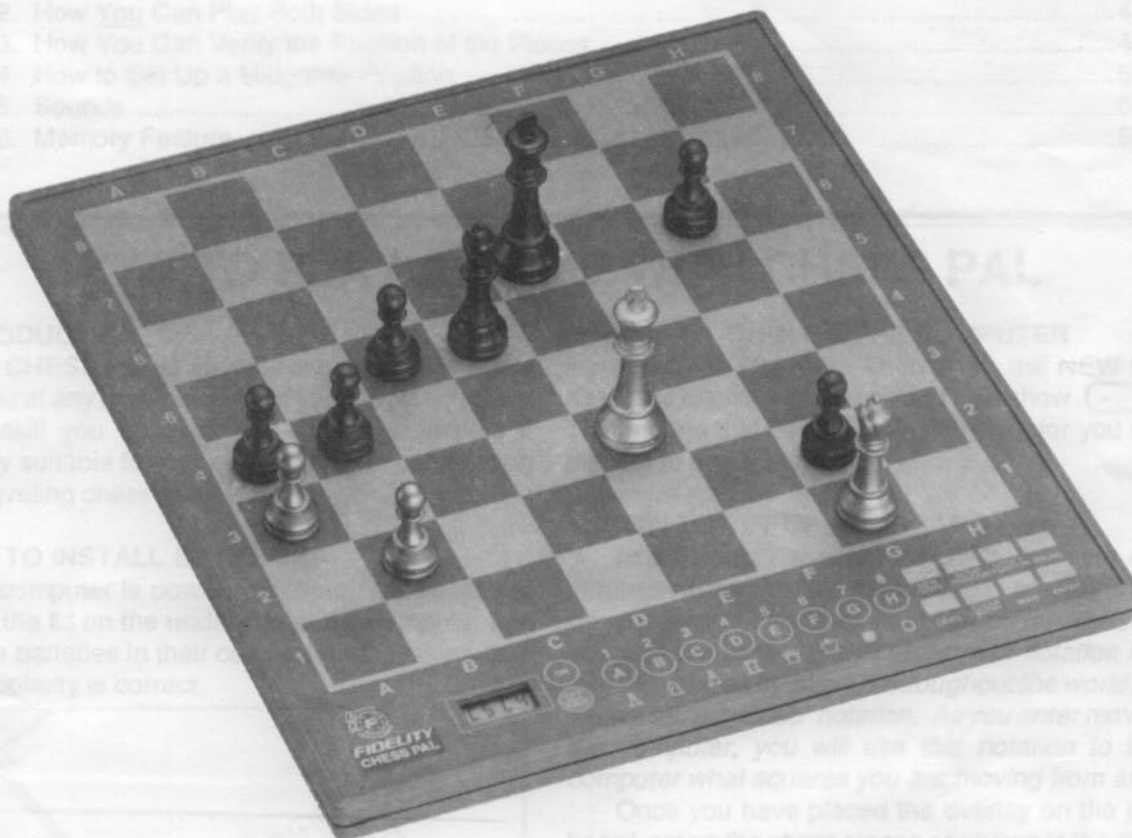


CHESS PAL CHALLENGER[®]

OWNER'S MANUAL
INSTRUCTION BOOKLETS
MODEL 6116



Chess Piece	White Symbol	Black Symbol	Chess Piece	White Symbol	Black Symbol
King			Bishop		
Queen			Knight		
Pawn					

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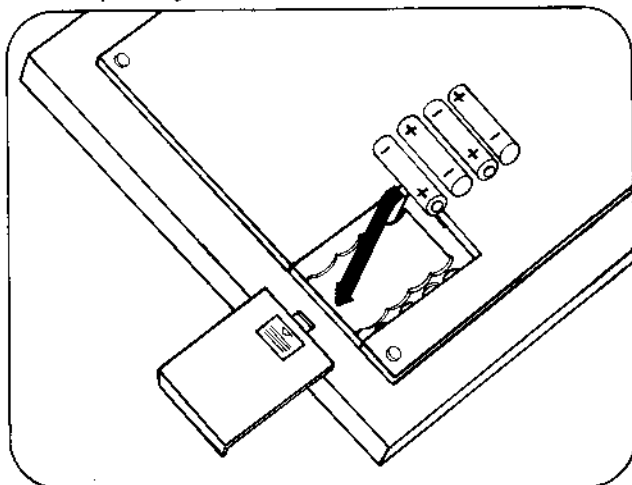
HOW TO PLAY A GAME WITH CHESS PAL

1. INTRODUCTION

Your CHESS PAL is an ideal opponent. It is ready to play you at any time, as often as you like, at whatever level of skill you choose. Its small size makes it especially suitable for use on a journey in conjunction with a traveling chess set.

2. HOW TO INSTALL BATTERIES

The computer is powered by four "AA" batteries. Remove the lid on the underside of the computer and install the batteries in their compartment, making sure that the polarity is correct.



3. HOW TO TURN ON THE COMPUTER

Press the ON Key. Then press the NEW GAME Key. The display window should now show **----**. This means that CHESS PAL is ready for you (White pieces) to make a move.

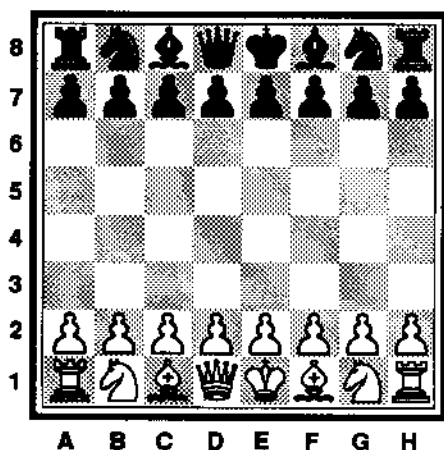
4. HOW TO SET UP THE BOARD

Important: For your first few games, cut out the **Notation Chart** in this manual, and place it over the playing board. This chart will help you familiarize yourself with chess notation. This form of notation is used and recognized by players throughout the world, and is known as "algebraic" notation. As you enter moves into the computer, you will use this notation to tell the computer what squares you are moving from and to.

Once you have placed the overlay on the playing board, set up the chess pieces as shown in the diagram on Page 2. Each chess piece is defined as follows:

Chess Piece	White Symbol	Black Symbol	Chess Piece	White Symbol	Black Symbol
King			Bishop		
Queen			Knight		
Rook			Pawn		

Board
set-up
at the
start of
a game

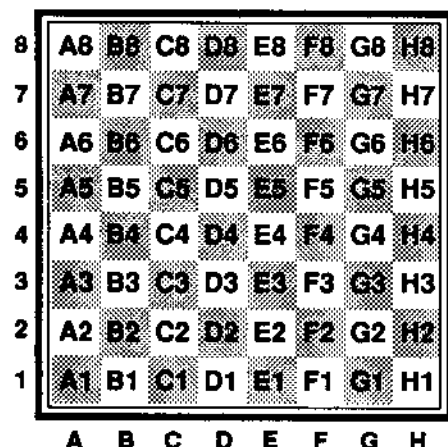


5. HOW TO TELL THE COMPUTER WHAT MOVE YOU ARE MAKING

As mentioned above, you must use chess notation to communicate your moves to the computer. The files, or vertical columns of squares on the chess board, are identified by the letters A through H (looking at the board from White's side). The ranks, or horizontal rows of squares, are numbered 1 through 8. This means that every square can be named by giving the letter of its file and the number of its rank—like a grid reference on a map. For instance, at the start of a game, the White King is on E1 and the Black Queen is on D8.

Files are
vertical
rows of
squares
(A-H)

Ranks
are hori-
zontal
rows of
squares
(1-8)



6. HOW TO ENTER YOUR MOVE INTO THE COMPUTER

These eight control keys are used to enter your moves into the computer.



To enter your move:

- (1) Decide which letter and number correspond to the square you are moving FROM.
- (2) Press the key that is marked with the correct letter.
- (3) Press the key that has the correct number above it.

- (4) Decide which letter and number correspond to the square you are moving TO.
- (5) Repeat steps 2 and 3.
- (6) Check the display window to make sure that your move is correctly displayed.
- (7) Press the ENTER Key. Your move is now registered into the computer's memory.
- (8) Carry out the move you entered with your piece on the chessboard.

EXAMPLE: Suppose you want to move the pawn in front of your Queen two squares forward:

- (a) This pawn starts on square D2, so press D. Display shows **d**
Now press **(B) (2)** Display shows **d 2**
- (b) The pawn is moving to square D4, so press D. Display shows **d 2 d**
Now press **(D) (4)** Display shows **d 2 d 4**
- (c) The move is correctly shown, so press ENTER. Display shows **° °**
- (d) After the computer is finished thinking, it will display its move. Display shows **G 8 F 6**

- (e) If the computer, for example, displays move **G 8 F 6** as shown, this means it has decided to move the Knight located on square G8 to square F6. Carry out this move on your chessboard, making sure you are moving to the right location, and then proceed with your next move.

7. IF YOU MAKE A MISTAKE

If you accidentally make an ILLEGAL entry, the computer will beep and the display will show **----**. You may now make the proper move entry.

If you make an accidental LEGAL move, it cannot be cleared once ENTER has been pressed. If you are unhappy with the accidental move entered, you can only clear it by beginning a new game.

If you make an accidental LEGAL move, and ENTER has not yet been pressed, press CLEAR ENTRY. You may now make the proper move entry.

8. HOW TO ENTER SPECIAL CHESS MOVES

Castling: To castle, simply enter the KING's move only (DO NOT enter the Rook's move), and then move both pieces on the board. If the computer is castling, it will display the KING'S move only (it will not display the Rook's move and assumes you will automatically recognize that it is castling and move its Rook).

En Passant Pawn Captures: Enter the FROM and TO square of the pawn move as you would for any other move. Don't forget to remove the captured pawn from the board!

Pawn Promotion: If your pawn reaches the far end of

the board, the computer assumes it is being promoted to a Queen. If the computer's pawn reaches the opposite end of the board, it will automatically promote it to a Queen.

9. HOW THE GAME ENDS AND A NEW ONE BEGINS

The words CHECK and MATE appear in the display window if either side has been checkmated.

To indicate stalemate, the display will show **=====**.

To start a new game, simply press the NEW GAME key. You may do this when checkmate or stalemate is indicated, or whenever the computer is expecting a move from you.

COACHING FEATURES

1. WATCH THE COMPUTER PLAY ITSELF!

If you press the MOVE key while the machine is computing, it will cut short its calculations and make the move which is best according to its analysis so far.

Note that special operations such as changing the level, checking the locations of the pieces, or setting up a position can only be carried out when it is your turn to move. It is for this reason that you may sometimes want to interrupt the computer's analysis.

If you press the MOVE key when it is your turn, the computer will start computing a move for the side you have been playing and will expect you to take over the other side. You can change sides like this as often as you like. **By pressing the MOVE key after every move played, you can make the computer play an entire game against itself!**

2. WARNINGS OF THREATS

If you press the ENTER key after the computer's move, the display will sometimes show the notation of one square on the chessboard. If your King is on this square, you are in check. Otherwise, the computer is warning you of a possible capture on this square, which may lead to loss of material for you.

To clear this message from the display, press the CLEAR key. Some of the "levels," as explained in *Special Features, Section 1*, give no warnings of captures, although the word CHECK will always appear in the display when the computer checks you.

SPECIAL FEATURES

1. HOW TO CHANGE THE COMPUTER'S SKILL LEVEL

The LEVEL key enables you to alter the speed and strength of the computer's play. The program has 64 different levels. On level 1, it takes an average of five seconds per move. On higher levels, it takes more time and its playing strength is correspondingly increased. The average for level 64 is 20-25 seconds per move.

To check the current level, press the LEVEL key. The display will then show "I" followed by a letter and a number, denoting the level in the manner explained by the table which follows. Once the level is displayed, you have the option of changing it. If you don't want to do so, press the CLEAR ENTRY key and carry on with the game.

If you do wish to alter the level, first look at the table to find out the notation for the level that you want. Then press the keys marked by the appropriate letter and number. For example, to select level 12, press "D" and then "2". Then press the ENTER key.

On some levels (as indicated in the table), the computer will warn you of threats against your pieces. Other levels dispense with these warnings.

Also note that on some levels, whenever you make your move, the machine automatically responds by computing a move for the other side—in the way we have already seen. These levels are indicated by "AUTOMATIC RESPONSE" in the table. On other levels, the machine will not compute a move unless you use the MOVE key to instruct it to do so.

LEVEL	DISPLAY	THREAT SIGNALS	AUTOMATIC RESPONSE
1	a1	no	no
2	b1	no	no
3	c1	no	yes
4	d1	no	yes
5	e1	yes	no
6	f1	yes	no
7	g1	yes	yes
8	h1	yes	yes
9	a2	no	no
10	b2	no	no
11	c2	no	yes
12	d2	no	yes

(Continued...)

LEVEL	DISPLAY	THREAT SIGNALS	AUTOMATIC RESPONSE
13	e2	yes	no
14	f2	yes	no
15	g2	yes	yes
16	h2	yes	yes
17	a3	no	no
18	b3	no	no
19	c3	no	yes
20	d3	no	yes
21	e3	yes	no
22	f3	yes	no
23	g3	yes	yes
24	h3	yes	yes
25	a4	no	no
26	b4	no	no
27	c4	no	yes
28	d4	no	yes
29	e4	yes	no
30	f4	yes	no
31	g4	yes	yes
32	h4	yes	yes
33	a5	no	no
34	b5	no	no
35	c5	no	yes
36	d5	no	yes
37	e5	yes	no
38	f5	yes	no
39	g5	yes	yes
40	h5	yes	yes
41	a6	no	no
42	b6	no	no
43	c6	no	yes
44	d6	no	yes
45	e6	yes	no
46	f6	yes	no
47	g6	yes	yes
48	h6	yes	yes
49	a7	no	no
50	b7	no	no
51	c7	no	yes
52	d7	no	yes
53	e7	yes	no
54	f7	yes	no
55	g7	yes	yes
56	h7	no	no
57	a8	yes	yes
58	b8	no	no
59	c8	no	yes
60	d8	no	yes
61	e8	yes	no
62	f8	yes	no
63	g8	yes	yes
64	h8	yes	yes

The level remains the same (even when a new game starts) until you change it again; you may do so as often as you like. When you first switch on after installing the batteries, the computer automatically selects level 7.

On any level, the computer is likely to take more time in a complicated position (with Queens and many other pieces on the board) than in a relatively simple one. On the other hand, the program is equipped with knowledge of several standard chess openings, so the first few moves of a game are likely to be played fast, irrespective of the level.

2. HOW YOU CAN PLAY BOTH SIDES

In the table of skill levels, some of the levels are marked "no" in the column headed AUTOMATIC RESPONSE. By selecting one of these levels, you enable yourself to make a continuous sequence of moves for both sides. For example, you may want a game to begin with a particular opening variation. Simply carry out the moves for White and Black, entering them into the computer in the usual way. When you arrive at the position from which you want the machine to play against you, switch to a level that has "yes" in the AUTOMATIC RESPONSE column, and press the MOVE key to start the machine computing.

3. HOW YOU CAN VERIFY THE POSITION OF THE PIECES

In case of confusion, you can make the computer show you where each piece on the board should be, according to its memory. To do this, begin by pressing the VERIFY POSITION key. The display will now show a dash, followed by a number and the notation for a square. For example: - 1 R 2.

In this example, the computer is indicating a White pawn on square a2. The position of the initial dash shows the color of the piece. For a Black piece, the dash would be at the top of the display. The number after the dash indicates the type of piece, according to the following code:

1 = Pawn	4 = Rook
2 = Knight	5 = Queen
3 = Bishop	6 = King

If you now want to check the positions of all the pawns of the same color, you should repeatedly press the key marked by the "pawn" symbol (♙). After each press, the position of another pawn is displayed. When the display shows two dashes in place of the notation for a square, this means there are no pawns of the appropriate color other than those already shown. (If you now press the "pawn" key again, the computer starts demonstrating the pawn positions all over again.)

Similarly, any other type of piece may be checked by repeated presses on the corresponding key. If there are no pieces of the appropriate type and color, the pair of dashes (mentioned above) will appear at the first key press. For example, on your first press of the "Rook" key, the display may show - 4 - -. This means that there are no White Rooks on the board.

To change over from checking White pieces to Black ones, press the key marked by a Black square, then use the "piece type" keys in the same way as before. Similarly, the key with a White square next to it enables you to switch to checking White pieces.

When you have checked as many pieces as you want, press CLEAR ENTRY to clear the display, then carry on with the game.

4. HOW TO SET UP A MIDGAME POSITION

You may sometimes want to construct a particular position on the board to see how the computer handles it. To do this, begin by pressing the SET UP POSITION key. This clears the display window, except for a single dash. You are now able to alter the current position by adding or removing pieces in the following ways:

- (a) To remove a piece, press the CLEAR ENTRY key, followed by the keys giving the notation of the square to be cleared. Then press the ENTER key. For example, to remove the piece currently on f5, press CLEAR ENTRY, (F), (E), ENTER.
- (b) To insert a piece, press the key with the appropriate "piece type" symbol, then the keys denoting the square, then the ENTER key. For example, to insert a Queen on d2, press (E), (D), (B), ENTER. This automatically replaces any piece that was previously on the square.

When the dash on the left of the display is at the bottom, any pieces inserted will be White; when it is at the top, they will be Black. To switch from one color to the other, use the keys marked with Black and White squares.

When you press the CLEAR ENTRY key to clear a square, the display shows "D". If you press a wrong key during either of these operations, CLEAR ENTRY allows you to start again.

When the position is ready, press the "White" or "Black" key to tell the computer which side moves next. Then re-press the SET UP POSITION key to return to normal playing conditions.

You can now start play by carrying out a move or by pressing MOVE to make the computer do so. First, however, we recommend that you carefully check the piece locations as described previously, to make sure that the position you have constructed is legal. There should not be too many pieces of the same type—for example, if there are eight White pawns on the board, there cannot be two White Queens. Each side must, of course, have one and only one King, and the King of the player who is not to move must not be in check. There must be no pawns on the first or eighth rank. If you find that the position is illegal, press SET UP POSITION again and correct it. If you do try to make the computer play from an illegal position, don't be surprised if the results are crazy!

If a King or a Rook has been placed on the board in the way we have just described, there can be no castling with that piece. To create a position in which, say, White has the right to castle Kingside, press NEW GAME before SET UP POSITION. Then leave the White King and King's Rook undisturbed on their starting squares, while other pieces are removed and re-inserted as necessary.

After a position has been set up, the next move cannot be a pawn capture *en passant*. To create a position where such a capture is legal, set up the immediately preceding position and then make the move which permits the capture.

5. SOUNDS

Press the SOUND key if you prefer the computer to operate without its audio signals. The sounds can be switched back on by pressing the same key again.

6. MEMORY FEATURE

If a game in progress has to be interrupted, the computer can be switched off, and will retain the game position in its memory while using a minimum of current. When you switch it on again, the situation will be wholly unchanged, and the game can be resumed as before. If the machine was computing a move when you switched it off, however, you will need to press MOVE to make it resume its calculations.