Excalibur
Grandmaster
Chess Computer
Schachcomputer
Ordinateur d’échecs
Computador de Ajedrez
Computador de Xadrez
Schaakcomputer
Excalibur Electronics—Pioneers and On-Going Leaders in Computerized Chess!

Chess is fun—why else would so many people down through the centuries have played it? And chess gives you that rare combination of something that's truly fun and truly beneficial. Chess keeps your mind sharp. Numerous studies from around the world have shown that students improve their grades by playing chess. Adults can improve their problem-solving skills by playing.

Excalibur's computer chess partners stand reliably ready for a game whenever you are—any time of the day or night!

You can count on Excalibur to expand the abilities, user-friendly features, and even the "personalities" of these computer trainers and partners. Excalibur has sustained spectacular growth over the last few years because we've given more and more people around the world the high-quality, thought-provoking fun that's become our trademark.

The most innovative games in the world have the name Excalibur Electronics on them.

Excalibur Electronics ... We make you think!

Excalibur Grandmaster!

The Grandmaster is a stunning, new innovation in computerized chess. It offers full-sized, tournament pieces on a vinyl board just like those used in national championships. Its feather-touch, auto-sensory move entry allows you to move the pieces naturally. Grandmaster senses the movements of the pieces and automatically keeps track of the game position. Of course it plays you—on any one of 100 different levels. But it does much more. Excalibur put its cutting-edge technology to use to make it easy for you to develop your talents for the game.

For the first time, it's easy for you to learn tournament opening moves with Grandmaster's Book Opening Trainer. And its Enhanced Teaching Mode Technology not only shows you how you stand against the computer at any time, and provides you with hints on request—it actually scores your every move against your Grandmaster.

Enjoy your new chess partner. Please read this manual carefully to make sure you benefit from all of Grandmaster's many new, easy-to-use features.
## Table of Contents

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Important Notes on Special Care</td>
</tr>
<tr>
<td></td>
<td>Time Controls</td>
</tr>
<tr>
<td>5</td>
<td>Batteries &amp; Adapters</td>
</tr>
<tr>
<td>5</td>
<td>Setting Up Special Positions &amp; Problems</td>
</tr>
<tr>
<td>7</td>
<td>Getting Familiar Quickly with Your Grandmaster</td>
</tr>
<tr>
<td>17</td>
<td>Playing Chess with a Friend while Getting GM's Help</td>
</tr>
<tr>
<td>17</td>
<td>Course in GM Use!</td>
</tr>
<tr>
<td>17</td>
<td>Learning Book Openings the Easy Way, with GM's Help!</td>
</tr>
<tr>
<td>8</td>
<td>Quick Start &amp; First Moves</td>
</tr>
<tr>
<td>19</td>
<td>More Special Training Features</td>
</tr>
<tr>
<td>11</td>
<td>Some Special Keys &amp; Features</td>
</tr>
<tr>
<td>21</td>
<td>Great Games</td>
</tr>
<tr>
<td>22</td>
<td>Capturing, Castling, Promoting</td>
</tr>
<tr>
<td>23</td>
<td>Troubleshooting Guide</td>
</tr>
<tr>
<td>23</td>
<td>Pawns, En Passant</td>
</tr>
<tr>
<td>24</td>
<td>Warranty Information</td>
</tr>
<tr>
<td>24</td>
<td>Too Hard? Too Easy? Levels &amp;</td>
</tr>
<tr>
<td>24</td>
<td>Authorized Service</td>
</tr>
</tbody>
</table>

## Important Notes on Special Care

Grandmaster is a precision, electronic instrument. Although it’s extremely well designed and manufactured with painstaking quality control, it naturally requires some special handling.

- Avoid rough handling, bumping and dropping.
- Avoid extreme temperatures. On especially cold or hot days, keep your Grandmaster inside away from windows, and away from direct sources of heat or cold, such as heating and air conditioning vents.
- To clean or dust your Grandmaster, use only a slightly dampened cloth.
- Never use chemical agents when cleaning. Never clean while AC adapter is connected.
- Turn the unit off when changing batteries.
- Never mix new batteries with old ones.
- Never mix Alkaline with Carbon Zinc batteries.
- Remove the batteries from your GM if you’re not going to use it for an extended period of time.
- When using the AC adapter, plug the cord into your Grandmaster before plugging the other end into the wall socket.
- In the unlikely event that your Grandmaster refuses to respond properly, see the troubleshooting guide in the back of this English language manual before proceeding further.

If you have questions about caring for your Grandmaster, please call Excalibur Electronic's customer service department, 9 AM to 5 PM Eastern US Time, Monday through Friday: 305-477-8080.
Batteries & Adapters

Changing Batteries
Your GM uses 4 "AA" batteries. Based on normal playing conditions, you should experience approximately 25 hours of battery life (or 1 month when switched to OFF) when using new alkaline batteries. When you wish to insert new batteries, turn the unit off. Carefully turn the computer upside down. Then remove the plastic battery cover on the base of the computer by unscrewing the two small metal screws. Insert the batteries, making sure that the polarity (+ and - ends) of the batteries is correct. Sometimes static discharge from new batteries may cause your computer to lock up. If the computer fails to respond, press the ACL (all clear) button. This will act as a master reset for your computer and solve the problem.

Low Batteries
When you press the ACL button and no beep is sounded, your batteries are low. You may first notice that messages on your display seem dim or faded. As soon as you notice indications that your batteries are low, you should insert new batteries immediately, or else your computer may begin behaving erratically, even signaling impossible or illegal moves.

AC Operation (Optional)
Depending on how frequently you play, to achieve the best performance you may want to purchase an AC adapter available for this game. To connect the adapter, be sure to first plug the connector into the right side of GM, and only then plug the transformer into an AC wall outlet. We strongly recommend using an Excalibur Electronics adapter made especially for your GM. If you have difficulty locating an Excalibur adapter locally, just fill out the order form inside your box or call our customer service department (see the back of this English instruction manual) for more information. If you do try a different adapter, make sure it has a voltage range of 6-8 volts and 100-200 Milliamps. The tip of the connector must be positive.

Getting Familiar Quickly with Your Grandmaster
Unpack your computer carefully and set it down on a table or desk in front of you, with its chess board up. Turn it, if necessary, so that the double row of keys (the control panel) is nearest you, right under your nose, so to speak. You'll notice that a white square is on your right. Contrary to the mistakes made in movies and TV commercials, real chess games always begin with a white square on the right-hand side of both players!

You'll also notice that every square of the chess board is labeled. The bottom left square is "A1." The square in the right-hand corner farthest away from you is "H8." Every square on the board has such an "address." The system is internationally accepted by all the world's governing bodies of chess. It's based on a simple grid, and is very easy to learn.
The vertical, up-and-down rows, labeled alphabetically, are called "files." Chess players talk about the "e-file." Or the "h-file." The horizontal, side-to-side rows are numbered and called "ranks." When White promotes a pawn, for example, he pushes a pawn to the "8th rank." When Black promotes, he pushes a pawn to the "1st rank."

The control panel, with its LCD (liquid crystal display) on its right is the key to your communicating and controlling your GM. While you're looking at it, look to its right to notice the "ACL" (All Clear) button near the right-hand corner of the computer. This key will be important when you first start up your GM.

You'll see that the keys are clearly labeled. You'll also notice that the figures of all the pieces in a chess set—King, Queen, Rook, Bishop, Knight, and pawn—appear below some of the keys.

Remember that your computer knows the rules of the game, including castling, en passant captures, pawn promotion and stalemate. It will never break any of these rules. Sometimes it may seem that the computer has made an incorrect move. What may have happened is that you inadvertently put one or more of the chess pieces on the wrong square during the game. Whenever you need to, you can verify the locations of all the pieces by using the Verify Key. (See Some Special Keys & Features, below.)

Let's take an introductory look at the functions of the different keys on your control panel.
**Keys to Success**—**A Short Course in GM Use!**

The labeled keys on your GM are your way of communicating with it. Choosing the right key will soon become second nature. Each key is explained in context later in this manual, but this little chart of their functions can serve as a quick reference and even a short course in how to use the surprising, and surprisingly easy-to-use, features of GM.

**NEW GAME:** Starts a new game.

**SCORE:**
Gives you GM's numerical evaluation of how far ahead or behind you are in the game. Each 100 points indicates the approximate value of one pawn. So an evaluation of -150 means GM feels that you are losing by the equivalent of one and one-half pawns.

**HINT:**
Used to ask GM for its recommended move.

**CLOCK:**
Displays your opponent's time.

**WHY NOT FROM:**
Used to question GM about one of its HINTs. Lets you examine moving a different piece than GM recommends. Push this key until the move you want to examine is displayed. Then push the SCORE key. GM will show you its evaluation and your opponent's possible reply.

**WHY NOT TO:**
Used to question GM about one of its HINTs. Lets you examine moving the same piece GM has selected, but to a different square than GM recommends. Push this key until the TO square you want to examine is displayed. Then push the SCORE key. GM shows you the score and your opponent's possible reply.

**OFF:**
Used to put GM into a sleep mode and save your game.

**ON/CLEAR:**
Used to turn GM on, or to clear an entry during a game.

**MODE:**
Used to enter the Teaching Mode, in which you can play "minigames" with a few pieces, by pushing MODE, then pressing one of the piece symbols. Also used to enter the Book Opening Trainer, as well as to enter the Great Games. After pressing MODE, lift and then replace one of the 32 chess pieces to learn one of 32 book openings. Lift and replace the piece a second time to play through one of the 32 great games.

**SETUP:**
Used to add or remove chess pieces or to enter special positions.

**VERIFY:**
Verifies the position of the chess pieces on the board.

**LEVEL:**
Changes skill levels.

**MONITOR:**
Used to enter Two-player mode, to enter Kibitzer mode, and to make GM choose a different move from the one it's chosen. (See later sections for details.)

**TAKEBACK:**
Takes back moves. This is an excellent key to use when practicing with your GM!

**MOVE:**
Press when it's your move to switch sides. Press when it's GM's move to interrupt GM's thinking and make it move immediately.

*The manufacturer reserves the right to change the characteristics and functions of this computer any time.*
Quick Start & First Moves

Be sure to read this section. It will show you the basics of getting started. Those impatient to play a game of chess with Grandmaster, or those who hate to read a whole manual before the fun begins, can then play Grandmaster a game immediately. But we recommend that you soon go on to read all sections of this manual, so that you'll get the full benefit from all of Grandmaster's amazing features.

1. Give Grandmaster the power!

Turn GM over carefully, so that the chess board is face-down, and insert the four (4) AA batteries in the battery holder. (For use with an optional AC adapter, see page 6, Batteries & Adapter.) Note the arrangement of the batteries called for by the diagram in the holder. Remember to ensure that the positive tip of each battery matches up with the + sign in the battery compartment. When the batteries are properly installed, you'll hear a beep as the GM automatically turns itself on. Then turn GM right-side up. Press the ACL (ALL CLEAR) button to the right of the control panel, and then press the "OFF" button.

2. Set up the Pieces.

Turn GM so that a white square is on your left, and so that the double row of keys is immediately in front of you. Place the chess pieces in their initial starting position, as shown in the diagram on the left, with the White pieces closest to you. If you choose to play Black, then go to the section "Playing Black" under Some Special Keys & Features.

3. Turn GM on and Press NEW GAME key.

Press the ON button. You'll hear a beep. Then press the NEW GAME button. You'll hear another beep, and Grandmaster's LCD (liquid crystal display), your window to the GM's mind, will read "PLAY."

Sometimes the display may read something like "ErH2" or simply "H2." This means that GM wants you to make sure the piece on the indicated square is centered properly. It isn't just that GMs are fussy—hey, they're entitled—but that your partner needs the pieces pretty close to the center of the squares to recognize them. If the error message persists, press ON/CLEAR, and if necessary, NEW GAME.

4. Make Your Move.

Lift the piece or pawn you want to move. (Don't slide it.) You'll hear a beep, and GM will display the "from" square. Place the piece gently on the square you want to move it to. There'll be another beep and GM's LCD will briefly display the "to" square. There's no need for poking or pushing on the squares. Grandmaster's feather-touch, auto-sensory system immediately recognizes where you've moved. If you make an illegal move, GM
will tell you by displaying an error message and the name of the TO square.

5. Move Grandmaster's Piece as Displayed—You've Got a Game Going!
You'll notice that GM almost immediately displays its response to your move. For example, if you play 1.e2-e4, Grandmaster may respond c7-c5. Pick up its pawn on c7 and you'll hear a beep. The display will show you only the TO square, reminding you to finish the computer's turn. Put the pawn on c5, and hear the confirming beep again. It's easy!

Immediately after you make GM's move, you'll see that the LCD displays your time used. Make your next move when you're ready. If after any move, GM fails to beep or does not properly display the move, try centering the piece. Oh, have you noticed? You're already playing Grandmaster! Enjoy the contest!

6. Want to Stop for a Phone Call, or Even a Weekend Trip? Just Press OFF to Save the Position.
Any time it's your move and you wish to stop playing, just press the OFF key. GM will switch off and go into a sleep mode. GM will remember the last position—including the elapsed time—as long as you do not interrupt the power supply. To resume play, just press the ON/Clear key. A word of warning, your memory of the game in progress may get a bit vague, but GM will remember the game perfectly! If you do want to clear the current game at any time, just press NEW GAME.

Some Special Keys & Features

Starting a New Game at Any Time
Whenever you want to start a new game, even if you're in the middle of a game with your GM, you may reset the computer to start another game by simply pressing the NEW GAME key. The computer will display "PLAY." Be sure to set up the pieces again! And remember, NEW GAME clears the current game from your GM's memory.

Taking Back Moves
If you change your mind about a move, or your last few moves, and want to go back to an earlier point in the game:

- Press the TAKEBACK button. Be sure to press it when it is your move, not your GM's. The display will show GM's last move.
- Reposition the piece to show you have taken back the move. If the move you have just taken back was a capturing move, once you have moved the capturing piece back to its FROM square, GM's display will show the name of the square on which a piece needs to be replaced. Replace the appropriate piece on the indicated square.
- If you want to then take back your last move, just press TAKEBACK again. Repeat the process until you've taken back all the moves—up to 12—you wish.

Note: If you pick up a piece to move it and change your mind before you place it on the TO square, you do not have to use the take-back feature. You can simply replace the piece on its FROM square.
Making GM Play a Move of Your Choosing
If you wish for your GM to take back its last move and play one of your choosing, press the MONITOR key. Then press the TAKEBACK key, and reposition your GM's last moved piece back to its previous square. Play the move you want GM to play, and hit the MONITOR key again. Now it's your move, and you're playing against the move you wanted to see.

Terminating GM's search and Requiring it to Move Immediately
When it's GM's move, you can press the MOVE key to force the computer to play the best move it has found so far. This feature can be very useful on the higher levels, where the computer can take a long time to move. On the Infinite Search level, for example, the computer keeps thinking until it either finds a mate or discovers that it cannot avoid mate. But you can stop its search at any time by pressing MOVE.

Playing Black and Changing Sides Any Time
Your GM automatically gives you the White pieces. If you wish to play Black, press NEW GAME, then press MOVE. Your GM will make a move as White. You should turn the computer 180 degrees (or move yourself to the other side of GM) so that you sit behind the Black pieces. Your GM offers a display and training keys on this side of the board as well. Whenever it's your move—at any stage of a game—you can press the MOVE key to switch sides. Grandmaster will then make a move, and you take over the position it was playing.

Position Verify
Some of us have had the misfortune of playing opponents who were very bad sports and tipped the board over "accidentally" when they were sure to lose. This trick wouldn't faze your GM! It not only remembers the position perfectly, but will let you know how to reset the pieces! The VERIFY key will confirm the placement of every piece. Besides resetting the pieces after some accident has disturbed them, this procedure can be very helpful in straightening out a problem in playing out a game, and in resetting the board to play out a game that is stored in your GM's memory.

Verifying the position is very easy. Just press the VERIFY key. Your GM will display the coordinates of the first Queen it finds on the board, with the piece's color shown on the left of the display. Pressing the VERIFY key again locates the next Queen and its color. If there is no such piece, two dashes will be displayed. Pressing one of the other piece keys will cause the locations for that type of piece to be verified in the same way. Repeat pressing the piece key to verify all examples of that piece on the board. When you have finished verifying the pieces, simply press the CLEAR key to exit the verification mode and resume play.

Other Special Features
As you play, you will notice that the computer sometimes replies to your moves instanta- neously. In the opening of a game, GM's replies are instantaneous because it is following its built-in opening library and doesn't have to "think." Later in the game, your
GM may reply to your move immediately, because the computer thinks while you are thinking, using the time you are considering a move to plan ahead. GM will try to anticipate the move you are likely to make and calculate a response for that move even before you've made it. If it has guessed right, it will immediately play the move it found while you were thinking.

Your GM announces check by displaying the word "check" on the left of its LCD when it places your King in check. When a game ends in checkmate, GM displays the word "LOSE."

Your GM recognizes draws by stalemate (LCD displays "STALEMATE"), by consecutive three-fold repetition (LCD displays "DR3"), and by the fifty-move rule (LCD displays "DR50").

Grandmaster never accepts illegal moves. If you attempt such a move, the computer sounds a double beep, and the display will indicate the square the piece was moved to. Pick up the piece and move it to another, legal, square. Or replace the piece on its previous square and move a different piece.

Some Special Chess Moves
Capturing
To win at chess, you've got to know how to take your opponent's men! Capturing men while playing your GM is really the same process as moving, except, of course, the captured piece has to be removed. To capture a piece, simply lift your capturing piece off its FROM square. Then lift GM's piece off your TO square, and set your piece down on your TO square. Set the captured piece aside, off the board. Remember not to slide the pieces.

When GM displays its move and there is one of your pieces on its TO square, it knows it's capturing that piece. Follow the normal procedure: Lift its piece off the FROM square, lift your piece from GM's TO square, and then set GM's piece down on its TO square. Set the captured piece off the board.

Castling
Castling is a special and important move in chess. It whisk the King away to safety while getting the Rook into the game.

Whether you're castling Kingside or Queenside, first move your King two squares. Your GM automatically recognizes castling maneuvers after the King is moved two squares. After you have moved the King, GM's display will remind you to move the Rook to finish the move. Remember you must always move the King first when castling!

Promoting Pawns
When a pawn reaches the other end of the board, you can promote it to a more valuable piece. To promote a pawn, make your pawn move to the last row in the normal manner.
Then press the piece symbol button for the piece you choose. Usually you would choose a Queen, but your GM can "underpromote" a pawn to other pieces as well. For example, if you wanted a Knight, you would press the Knight symbol when promoting your pawn. Whatever you choose, GM immediately recognizes your new piece, and begins thinking about the position in order to move. When the computer pushes a pawn to your back row or rank, and promotes, you can assume that it promoted to a Queen, since more than 99% of the time, queening is the best move. If you want to make sure which piece your GM has chosen, simply use the VERIFY procedure. Remember to change the piece on the board after either side promotes a pawn.

*En Passant*-Taking a Pawn In Passing
For an *En Passant* capture, simply move your pawn according to the rules for this capture. The square of the pawn being captured will then appear on the display. This is to remind you to remove the captured pawn.

**Too Hard? Too Easy? Levels & Time Controls**
Grandmaster has 100 different levels. Generally it's best to find a level at which you are challenged, but win about half the time. Levels 1-94 are used when you are playing a game against the computer. Each of these levels allows your GM to think for different periods of time. (Tournament chess players call these periods "Time Controls.") The longer GM can think, the better moves it makes. Levels 95-100 are used to make your computer perform a specific search for mate-in-one through mate-in-six. These find-the-mate puzzles are popular. You'll see them in books, magazines and newspapers. When you put in new batteries, when you plug in an AC adapter, or when you hit the ACL (all clear) key, your GM is re-set (that is, it defaults automatically) to Level 6.

Level 6 is GM's easiest level. It's intended for a beginning player. If you do not win frequently enough on level 6, you could play your GM "handicapped games," in which it plays without one of its pieces. (See Setting Up Special Positions & Problems, below.) You can do this until you get enough practice to win frequently enough on Level 6.

**Changing the Playing Level**
To change the level, simply press the LEVEL key. The computer will display the current playing level. Press the LEVEL key again to increase the level by one. Hold the LEVEL key down to change the level by tens. You can go to a lower LEVEL than displayed by going up to 100 and then beyond, when the levels will begin at one again. When you have selected your desired level, press the ON/CLEAR button and continue playing. Your GM will now automatically choose this new level for all new games until you change it again, or until its power is interrupted.

At the start of any game, the computer uses its openings "book," which contains thousands of moves, and when it is still in its openings book, the program will move instantly. Once the program is out of its openings book, the thinking times for the various playing levels vary.
Level 1: User Adaptable Time Averaging
This is a fascinating level. GM calculates the average time you have taken over your past six moves and will respond in the same average time! If you slow down, the computer will also slow down. If you start to play more quickly, the computer will also speed up.

Levels 2-6: Fixed-Ply Searches
When you move and the computer responds with a move, this is defined as one complete move. A ply is a half move. So there are two plies for one move. Within this group of levels, the computer is limited by the plies it can investigate. Level 2 is the strongest level of this group, because the computer can examine the most plies. Level 6 (GM's default setting) is the weakest, since it's limited to one ply (one-half move). Your computer will respond almost instantly on every move on level 6. Here are the ply-depths each of these levels is restricted to:

<table>
<thead>
<tr>
<th>Level 2—5 ply search</th>
<th>Level 5—2 ply search</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 3—4 ply search</td>
<td>Level 6—1 ply search</td>
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<tr>
<td>Level 4—3 ply search</td>
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</table>

Levels 7-36: Fixed Time For Each Move
When set to any of these 30 levels, your GM will always respond in exactly the specified amount of time shown below, unless it has only one legal move, in which case it will play instantly, or unless it sees that it can force checkmate, or cannot avoid being checkmated, in which case it will make its move as soon as it finds the mating sequence. Remember, the longer you allow the computer to think, the stronger it will play. And remember, too, that these fixed intervals will begin to take over only after your GM has exhausted its programmed, "book" knowledge of an opening. During the time it's "in book," it will respond nearly instantly.

<table>
<thead>
<tr>
<th>Level 7</th>
<th>1 sec.</th>
<th>Level 17</th>
<th>12 sec.</th>
<th>Level 27</th>
<th>50 sec.</th>
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<tbody>
<tr>
<td>Level 8</td>
<td>2 sec.</td>
<td>Level 18</td>
<td>14 sec.</td>
<td>Level 28</td>
<td>1 min.</td>
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<tr>
<td>Level 9</td>
<td>3 sec.</td>
<td>Level 19</td>
<td>16 sec.</td>
<td>Level 29</td>
<td>1 min. 15 sec.</td>
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<tr>
<td>Level 10</td>
<td>4 sec.</td>
<td>Level 20</td>
<td>18 sec.</td>
<td>Level 30</td>
<td>1 min. 30 sec.</td>
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<tr>
<td>Level 11</td>
<td>5 sec.</td>
<td>Level 21</td>
<td>20 sec.</td>
<td>Level 31</td>
<td>1 min. 45 sec.</td>
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<tr>
<td>Level 12</td>
<td>6 sec.</td>
<td>Level 22</td>
<td>25 sec.</td>
<td>Level 32</td>
<td>2 min.</td>
</tr>
<tr>
<td>Level 13</td>
<td>7 sec.</td>
<td>Level 23</td>
<td>30 sec.</td>
<td>Level 33</td>
<td>2 min. 15 sec.</td>
</tr>
<tr>
<td>Level 14</td>
<td>8 sec.</td>
<td>Level 24</td>
<td>35 sec.</td>
<td>Level 34</td>
<td>2 min. 30 sec.</td>
</tr>
<tr>
<td>Level 15</td>
<td>9 sec.</td>
<td>Level 25</td>
<td>40 sec.</td>
<td>Level 35</td>
<td>2 min. 45 sec.</td>
</tr>
<tr>
<td>Level 16</td>
<td>10 sec.</td>
<td>Level 26</td>
<td>45 sec.</td>
<td>Level 36</td>
<td>3 min.</td>
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Levels 37-66: Averaged Time
If set to one of these levels, your GM will take an average of the specified amount of time. Of course, if it has only one legal move, it will respond instantly.
**Levels 67-89: Countdown—Fixed Time for Whole Game (Sudden Death)**

When playing in these levels, you and your opponent must make all of the moves for your whole game in a fixed amount of time. When set to any of these levels, the computer will display the total amount of time allowed for the whole game, and then count down, always displaying the time remaining for each player’s side of the whole game. When either player consumes the permitted total time, a beep sounds and the word TIME appears in the display, which indicates a loss due to surpassing the fixed time control. If you so choose, your GM will allow you to continue the game and disregard the time controls. If you make a move after using all your time, GM will give you another allotment of time, and begin to count down again. In fact, it will do this as many times as you want. (In a tournament game, your opponent would not be so generous!)

Many chess players like to play five-minute chess, often called "speed chess" or "blitz" chess. Note that level 70 provides this option.

**Levels 90-93: Tournament Levels**

These four levels allot time the way most chess tournaments require. Each player must make a specified number of moves within a specified amount of time. If he doesn't, he oversteps his time control, and he loses. If he completes the required moves in the allotted time, he gets more time and must again complete a certain number of moves. In such a time control, a game requiring many moves can go on for a long time!

The clocks will show the total time consumed. Time saved during the first time period is added to the next time period. Level 92 offers a primary time control that's different from the rest. This is a very typical tournament situation.
**Level 94: Infinite Search**

This is the level to choose if you want your GM to work on a chess problem that's not suitable for the mate-finding levels noted below. For example, you may leave GM concentrating on a problem overnight if you wish. On level 94 the computer will go on thinking, to find the best possible move, until you press the MOVE key. Otherwise it will not move, unless:

- it has a "book" move available;
- it runs out of memory for its analysis of the position; or
- it completes the analysis to its own satisfaction, e.g. by finding a forced mate.

**Levels 95-100: Mate-finding**

Levels 95-100 are a special kind of position-solving levels. They are programmed specifically for solving mate-in-X problems popular in books, magazines, and newspaper columns. For example, if the problem is given to find mate-in-four in a specific position, enter the position on your GM using the set-up mode. (See Setting Up Special Positions & Problems, later in this booklet.) Then select level 98.

If your GM takes too long to solve such a mate problem on these levels, you should also try the problem in level 94, "Infinite Search."

<table>
<thead>
<tr>
<th>Level</th>
<th>Mate in 1</th>
<th>Level</th>
<th>Mate in 2</th>
<th>Level</th>
<th>Mate in 3</th>
<th>Level</th>
<th>Mate in 4</th>
<th>Level</th>
<th>Mate in 5</th>
<th>Level</th>
<th>Mate in 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 95</td>
<td>Mate in 1</td>
<td>Level 96</td>
<td>Mate in 2</td>
<td>Level 97</td>
<td>Mate in 3</td>
<td>Level 98</td>
<td>Mate in 4</td>
<td>Level 99</td>
<td>Mate in 5</td>
<td>Level 100</td>
<td>Mate in 6</td>
</tr>
</tbody>
</table>

Always remember, after choosing the level you wish, choose the ON/CLEAR key to return to your game.

**Setting Up Special Positions & Problems**

By using the SET UP button, you may change the position on the board by adding or removing pieces. Obviously, this feature lets you strengthen your side or the computer's, resurrect lost pieces, or even move your King out of an imminent checkmate threat. With the SET UP key, you can also set up a problem you want your GM to solve. (See Levels & Time Controls.)
**ENGLISH**

**To remove a piece during a game:**
- Press the SET UP key. ("E1" will be displayed.)
- Remove any piece you choose.
- Press the ON/CLEAR key.
- Resume play.

If you wish to verify the position of the new piece, use the VERIFY and PIECE SYMBOL keys, as described above.

**To add a piece during a game:**
- Press the SET UP key.
- Press the PIECE SYMBOL key corresponding to the piece you're adding. Place the piece on the square.
- When doing any kind of set-up, it's important to confirm the color of the piece you're using. So take special note of the color indicator in the left of the display window. The open square denotes White's pieces, and the shaded square denotes Black's pieces. If the piece you're adding is Black, lift it up and set it a second time on the same square. The display will indicate that the piece is Black by changing the color indicator to a black box.
- Press ON/CLEAR and continue playing.

**To change a position during a game,** use the two procedures described above to remove and add pieces until the position is the one you want.

**To set up a problem to solve:**
- Press the OFF key.
- Remove the pieces until you have an empty board.
- Press the ON/CLEAR key to turn your GM on. The display will indicate an error, but this will disappear when you:
- Press the SET UP key.
- Press the PIECE SYMBOL for the King sgiving. Place the White King down on the square you wish. The display will confirm the square and color of the King.
- Place the Black King down on the correct square—then lift and place it on the square again so that the display confirms that it is Black.
- If there is one or more Queens in your problem, press the PIECE SYMBOL key for the Queen iving. Follow the same procedure described in the previous step, only positioning the Queens instead of the Kings.
- Follow this procedure for each piece, continuing in the following order: Rooks, Bishops, Knight, and pawns.
- When you're finished setting up the pieces, press the MODE button. "SdE" will be displayed, along with the color indication box. If White is to move first, make sure a clear box indicates White is on move. If it is Black's move, hit the mode button again, so that the shaded box confirms it is Black's move.
- Press the ON/CLEAR key. (It's a good idea now to use the VERIFY process to verify your problem is set up correctly.)
- Press LEVEL to select the desired level to solve the problem. Press ON/CLEAR key.
- Press the MOVE key to make the computer suggest a move at any time.
Playing Chess with a Friend while Getting GM's Help

Grandmaster offers you Advanced Two-player Technology, a high-tech mode in which you and a friend can play a game of chess normally, while both of you use the computer's special training features. It's easy to use—and it's a lot of fun!

In this mode, each player has his own control panel and LCD display. So each player has the benefit of his own time being displayed. By pressing the CLOCK button, each player can see the opponent's time.

To simplify getting started, we'll assume that your friend will play Black the first game. Later, you and your friend can switch places so that he can play White. (Normally, players take turns playing White.) Set up your GM as usual, but this time ask your friend to sit on the other side of GM's chess board, as you would in a normal game. Show him—or her—the second player's control panel, which is a smaller version of the master control panel in front of you. Explain the functions to him. He'll catch on quickly with your help.

Then press the ON/CLEAR, NEW GAME, and MONITOR keys. Select your time control by using the LEVEL key. Press ON/CLEAR, and make your first move!

Kibitz or Advisor Chess

Chess players say that a third party is "kibitzing" when he offers advice. If both players agree, you can play a very educational and enjoyable form of chess in which GM can advise each player when it is asked to. With a simple touch of the SCORE key, each player can see GM's evaluation of the position. And each player can take advantage of the HINT feature, as well as WHY NOT FROM? and WHY NOT TO? keys. (The word "MOVE" stays on the display while in MONITOR mode.)

The "Equalizer" Feature

Unless you make rules about how often you and your friend can access the HINT button, you may find that the two of you aren't playing each other at all, but that, in effect, your GM is playing itself! So, we suggest that you agree on how many times each of you can use GM's HINT button. If one player is beaten most of the time, then you may even up the game by allowing that player more hints than the other. For example, the stronger player may get to ask for a total of three hints for the whole game, while the weaker player is entitled to six. Such agreements are completely up to you and your opponent.

Learning Book Openings the Easy Way, with GM's help!

One of the most stunning innovations of the Grandmaster is its special ability to teach you "book openings." Book openings are the beginning patterns of moves that have been worked out by chess masters over the centuries to be the best ways to begin a game. Previously, players had to spend tedious hours searching out lines of play from hard-to-follow columns in books. This process required a confusing process of looking back and forth between a book and a chess board. But with your GM's special training feature, you'll find yourself learning the openings extremely quickly, saving yourself many hours—and having fun while you learn! And your GM will even score you on your
memory of the moves. Use this training mode as often as you wish—keep improving your score and your knowledge of opening play!

You can learn 32 separate book openings from your GM. To activate this option:

- Simply turn your GM on and press the MODE key. The display will show "SP:CL."
- Then lift and replace any of the 32 pieces and pawns on its original, game-beginning squares—for example the Rook on a1. The display will show "OpA1" to confirm your choice of the opening triggered by the a1 square.
- Then press the ON/CLEAR key. The display will read "0 score." Since a1 activates the Ruy Lopez Open Defense, you make the first move, 1. e2-e4. GM will then make the Black response, 1... e7-e5. After you move GM's piece according to the display, your score will appear in the LCD. You receive one point for each correct move.
- If you choose an incorrect move, your GM will double beep and display an error message. Replace the piece you've just moved, and the display will show you the FROM square of the correct piece to move next. If you then move it to an incorrect square, you will again get an error message, until you find the correct TO square.
- Whenever it's your move, you can press HINT to find out the correct move for the opening you're learning. (Naturally, you will earn no points when you ask for the next move in this way.)
- If you wish to study the openings from the Black side, just switch sides. (See Some Special Keys & Features.)

Below are the openings that you can study and the square that activates each.

<table>
<thead>
<tr>
<th>Openings beginning with 1. e2 - e4</th>
<th>Openings beginning with 1. d2-d4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ruy Lopez, Open Defense</td>
<td>Queen's Gambit Declined, Orthodox</td>
</tr>
<tr>
<td>Ruy Lopez, Zaitsev Defense</td>
<td>Queen's Gambit Declined, Lasker's</td>
</tr>
<tr>
<td>Ruy Lopez, Exchange Variation</td>
<td>Queen's Gambit Declined, Exchange</td>
</tr>
<tr>
<td>Scotch Opening</td>
<td>Queen's Gambit, Slav Defense</td>
</tr>
<tr>
<td>Scotch Four Knights</td>
<td>Queen's Gambit Accepted</td>
</tr>
<tr>
<td>Giuoco Piano</td>
<td>Nimzo-Indian, Classical Variation</td>
</tr>
<tr>
<td>Two Knights' Defense</td>
<td>Nimzo-Indian, Rubinstein Variation</td>
</tr>
<tr>
<td>Four Knights' Game</td>
<td>Queen's Gambit, Semi-Slav Defense</td>
</tr>
<tr>
<td>Petroff's Defense</td>
<td>Queen's Indian Defense</td>
</tr>
<tr>
<td>Sicilian, Alapin Variation</td>
<td>Queen's Indian, Petrosian Variation</td>
</tr>
<tr>
<td>Sicilian Najdorf</td>
<td>Bogo-Indian Defense</td>
</tr>
<tr>
<td>Sicilian Dragon</td>
<td>Catalan System</td>
</tr>
<tr>
<td>Sicilian Keres Attack</td>
<td>Grunfeld Defense</td>
</tr>
<tr>
<td>Caro-Kann opening</td>
<td>King's Indian Defense</td>
</tr>
<tr>
<td>Caro-Kann, Panov attack</td>
<td>Modern Benoni Defense</td>
</tr>
<tr>
<td>Caro-Kann, Exchange Variation</td>
<td>Benko Gambit</td>
</tr>
</tbody>
</table>

18
More Special Training Features

In addition to its ability to teach you opening book moves, your GM has many training features that will increase your knowledge and enjoyment of chess. Take a moment to practice with these features—and use them often to get the most out of your GM!

**Score: Get GM's evaluation.**

Press the SCORE key, and your GM will display the numerical evaluation of how far ahead or behind you are in the game. Each 100 points indicate the approximate value of one pawn. So an evaluation of -150 means GM feels that you are losing by the equivalent of one and one-half pawns. (For the relative values of the chess pieces, see chart at right.) A score of 300 means that GM feels you are winning by the equivalent of a Knight. The maximum score displayed is + or -990.

<table>
<thead>
<tr>
<th>Chess Piece</th>
<th>Relative Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pawn</td>
<td>1</td>
</tr>
<tr>
<td>Knight</td>
<td>3</td>
</tr>
<tr>
<td>Bishop</td>
<td>3</td>
</tr>
<tr>
<td>Rook</td>
<td>5</td>
</tr>
<tr>
<td>Queen</td>
<td>9</td>
</tr>
<tr>
<td>King</td>
<td>Invaluable</td>
</tr>
</tbody>
</table>

**Hint: Don't know what to do? Ask your GM!**

If you do not know which move to make, or you think the computer might have a better idea, you can ask your GM for a hint. Press the HINTOnce and the computer will display what it thinks you should do based on its previous search. If you choose to accept the hint, then make that move. If you choose not to accept the hint, and you want to make another move instead, then simply press CLEAR and make another move.

**Why Not To?**

Pressed after you've pushed the HINT key, this special WHY NOT TO? key lets you examine moving the same piece GM has suggested, but to a different square than GM recommends. Press this key until the TO square you want to examine is displayed. Then push the SCORE key. GM displays what your score would be if you played this move. Then it displays your opponent's possible reply.

**Why Not From?**

Pressed after you've pushed the HINT key, this special WHY NOT FROM? key lets you examine moving a different piece altogether than GM recommends. Push this key until the move you want is displayed. Then push the SCORE key. GM shows you what the score would be if you played this move. Then it displays your opponent's possible reply.

**Threat Warning**

Your GM will warn you if it threatens to win one of your pieces. The word "threat" will be displayed at the bottom right of the LCD, and the square of the threatened piece will flash on the LCD for eight seconds. Then the LCD will return to displaying the time. Note that the square displayed may not be the ultimate piece the GM would win—it may be that piece's defender.
Five Special "Mini-Game" Training Modes

The most famous and successful chess teachers in the world take their beginning students from the simple to the complex by having them play "mini-games" of chess that concentrate on just one or more types of pieces. Even advanced players practice these basics, just as a concert pianist continues to practice the scales so that they remain second nature. Like any great trainer, your GM will play you these special practice games.

For example, Special Training Mode 1 will train you to play with just pawns and Kings on the board. To train in this highly recommended way:

✶ Set up all the pieces, turn on your GM, and press NEW GAME.
✶ Then press the MODE key. Your display will read "SP:CL."
✶ Press the key under the silhouette of a pawn. (This happens to be the MOVE key as well, but after you've pressed MODE, GM knows to recognize the PAWN message.) Your display will start giving you error messages, such as "ErH8," because you need to remove all the pieces except pawns and Kings, until you have the following position on your board:

```
  a b c d e f g h
  1 2 3 4 5 6 7 8
  K K K K K K K K
  P P P P P P P P
  P P P P P P P P
  P P P P P P P P
  P P P P P P P P
  P P P P P P P P
  P P P P P P P P
  P P P P P P P P
```

Make your first move. Your object, as in regular chess, is to checkmate the King. Normally, this means both sides will try to force a pawn through to the other side of the board safely to promote it to a Queen. You'll learn lots of principles, tricks, and traps in this training mode that will win you many full-fledged chess games!

All of these training modes can be made even more effective by combining them with other teaching features of GM:

✶ Ask for a HINT any time it's your move.
✶ Get GM's evaluation of the position by pressing SCORE.
✶ Switch sides when you want to practice from the Black side.

There are five special training modes. Before entering any of them, reset all of the pieces in their game-beginning positions. And after entering the mode, remember to remove all of the pieces not used in that training mode.

- King and pawns: Press ♂
- Kings, Knights, and pawns: Press ♚
- Kings, Bishops, and pawns: Press ♛
- Kings, Rooks, and pawns: Press ♚
- Kings, Queens, and pawns: Press ♚
Great Games!
Your Grandmaster contains 32 of the greatest World Championship games. To play over one of these chess masterpieces, press the MODE key. Your display will show "SP:CL." Then lift the White Rook on a1 and set it down again. Your display will read "OPA1," as if you wanted to study the Ruy Lopez opening. But lift and set down the Rook on a1 once more, and your display will read "GAA1," indicating you want to study Game 1 of the 32 great games. Simply press MODE again. You're ready to guess the first move. If you don't guess correctly, your GM's display will indicate an error, and display the correct "FROM" square.

To make playing through the games even more fun, your GM will score you as you try to guess the moves. It will give you one point for picking up the same piece moved in the game, and another point for putting it on the same square that it went to in the actual game. Your score appears after every Black move.

The table below indicates the square activating each game, as well as the names of the opponents, and the locations and dates of the games.

| a1: Karpov-Bagirov, Riga, 1970 | a7: Karpov-Kasparov, Moscow, 1984 |
| b1: Karpov-Savon, Moscow, 1971 | b7: Karpov-Kasparov, Moscow, 1985 |
| c1: Karpov-Hort, Moscow, 1971 | c7: Kasparov-Karpov, Moscow, 1985 |
| d1: Karpov-Kuzmin, Moscow, 1973 | d7: Karpov-Kasparov, Moscow, 1985 |
| f1: Karpov-Spassky, Leningrad, 1971 | f7: Karpov-Kasparov, Leningrad, 1986 |
| g1: Karpov-Korchnoi, Moscow, 1974 | g7: Kasparov-Karpov, Leningrad, 1986 |
| h1: Huebner-Karpov, Tilburg, 1977 | h7: Karpov-Kasparov, Leningrad, 1986 |
| a2: Portisch-Karpov, Moscow, 1977 | a8: Kasparov-Karpov, Seville, 1987 |
| b2: Karpov-Miles, Tilburg, 1977 | b8: Karpov-Kasparov, Seville, 1987 |
| c2: Timman-Karpov, Montreal, 1979 | c8: Kasparov-Karpov, Seville, 1987 |
| d2: Karpov-Geller, Moscow, 1983 | d8: Karpov-Kasparov, Seville, 1987 |
| e2: Karpov-Kasparov, Moscow, 1984 | e8: Karpov-Kasparov, Belfort, 1988 |
| f2: Kasparov-Karpov, Moscow, 1984 | f8: Karpov-Kasparov, New York, 1990 |
| g2: Karpov-Kasparov, Moscow, 1984 | g8: Karpov-Kasparov, Lyon, 1990 |
| h2: Karpov-Kasparov, Moscow, 1984 | h8: Karpov-Kasparov, Lyon, 1990 |
Troubleshooting Guide

Your computer has been manufactured and tested to very high standards and is most unlikely to have a defect. In the unlikely event that you do encounter a problem when using your computer, please refer to this troubleshooting guide.

We have found from many years of customer service that almost all so-called defects can be traced to the user accidentally pressing a wrong key or moving a piece to the wrong square, which makes it appear later in the game that the chess computer is not operating as expected. Often the problem is that the user misunderstands something about the way the chess pieces move. You may wish to consult the rules of chess to make sure you are not making an illegal move.

If your display gives you an error message, first try centering the piece on the square indicated, and pressing ON/CLEAR.

You'll save yourself time and frustration if you keep in mind that:

In almost all circumstances, if your Grandmaster does not perform as expected, the user has made an operational error.

My Display Doesn't Show Anything When I Turn It On.

If there is nothing showing on the display and the computer does not react to moves:

1. If you are using a power adapter, make sure that the adapter is the correct voltage and polarity, as shown on the label on the underside of the computer. (See Batteries and Adapters in the front of this manual.) Also ensure that the adapter is plugged in properly to the computer and confirm that the plug outlet is working by plugging in a lamp or other household appliance.

2. If you are using batteries, make sure that they are held firmly by the battery clips and that you have observed the correct polarity. See the diagram engraved in the battery compartment.

3. If you have had the batteries a long time, they may have run down. So try replacing them. If the batteries or power adapter appear to be okay, the computer may have been affected by a static discharge which may have caused it to lock up. Press the ACL (all clear) button to the right of the main key console.

The Computer Refuses to Make a Move.

If the computer has been playing normally but then refuses to make a move:

1. If the computer's color symbol is flashing, then the computer is still thinking. Be patient if you can, or press the MOVE key and the computer will respond immediately with the best move it has found so far.
ENGLISH

2. If your color symbol is on and the clock is ticking, the computer thinks that you have not made your last move. Make sure that the pieces on the board are on the same squares as those in the computer's internal memory. You can do this by using VERIFY mode. If the pieces all appear to be on the same squares that the computer thinks they should be, it is still your turn to move.

The Computer Refuses to Accept My Move.
If you make a move but the computer refuses to accept it:

1. Make sure that you have completed your move, lifting the piece from the FROM square and placing it in the center of its TO square.
2. If your move was castling, make sure that you have moved both your King and Rook. When castling, always make sure to move your King first. And make sure that your King does not pass through check when castling—that's an illegal move!
3. If the move was an en passant capture, make sure that you have moved the capturing pawn in the correct way and that you removed the captured pawn.
4. If your move was a pawn promotion, make sure that you have completed the process of promotion.
5. Look to see if the computer's last move put you in check, and if so, make sure that your reply move does not leave you in check. Look to see if your move puts your King in check, either by moving the King to a square attacked by an enemy piece or by moving a piece away from a square where it blocked an attack on your King by an enemy piece.

Limited One-Year Warranty
EXCALIBUR ELECTRONICS, INC., warrants to the original consumer that its products are free from any electrical or mechanical defects for a period of ONE YEAR from the date of purchase. If any such defect is discovered within the warranty period, EXCALIBUR ELECTRONICS, INC., will repair or replace the unit free of charge upon receipt of the unit, shipped postage prepaid and insured to the factory address shown at the end of this English manual.

The enclosed warranty card must be completed and returned to Excalibur within seven (7) days of purchase in order for warranty performance to be rendered.

The warranty covers normal consumer use and does not cover damage that occurs in shipment or failure that results from alterations, accident, misuse, abuse, neglect, wear and tear, inadequate maintenance, commercial use, or unreasonable use of the unit. Removal of the top panel voids all warranties. This warranty does not cover cost of repairs made or attempted outside of the factory.
Any applicable implied warranties, including warranties of merchantability and fitness, are hereby limited to ONE YEAR from the date of purchase. Consequential or incidental damages resulting from a breach of any applicable express or implied warranties are hereby excluded. Some states do not allow limitations on the duration of implied warranties and do not allow exclusion of incidental or consequential damages, so the above limitations and exclusions in these instances may not apply.

This warranty covers normal consumer use and does not cover damage that occurs in shipment or failure that results from alteration, accident, misuse, or abuse.

**Authorized Service for Your Excalibur GM**

The only authorized service center in the United States is:

**Excalibur Electronics, Inc.**
13755 S.W. 119th Avenue
Miami, Florida 33186
U.S.A.

Telephone: (305) 477-8080
Fax: (305) 477-9516

Ship the unit carefully packed, preferably in the original carton, and send it prepaid, and adequately insured. Include a letter, detailing the complaint and including your day-time telephone number, inside the shipping carton.

If your warranty has expired and you want an estimated fee for service, write to the above address, specifying the model and the problem.

Do not send your game without receiving an estimate for servicing.

We cannot store your game!