KASPAROV ™
CHESS COMPUTER

✚ Swiss-led
Precision

Fig. 1

AA/AM3/R6

Fig. 2

**GARRY KASPAROV
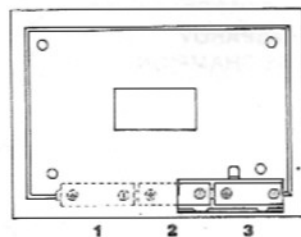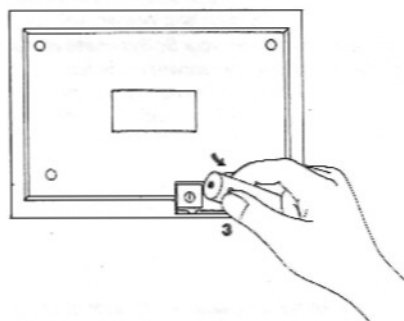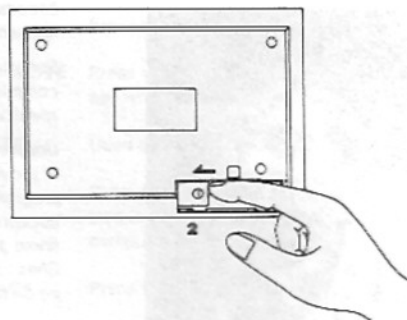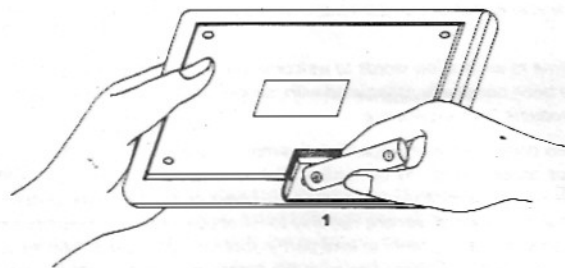WORLD CHESS CHAMPION**

Dear Fellow Chess Player,

When computers were first invented just four decades ago few people realized that mankind was witness to the most important single development of our time. Today computers have become freely available and in a few years there will be a computer in almost every household.

SciSys has asked me to write a few words to welcome you to the world of chess playing computers. I have been personally associated with the company since 1983 and can therefore speak about its products from experience.

Until recently chess computers were regarded as simple toys which would never be capable of providing serious opposition for the enthusiast. The rapid advance of technology and programming skills has certainly changed that. Today chess computers have become an accepted part of the chess world, serving not only to introduce new players to the world's finest game but also encouraging them to take part in tournaments against human opponents. Chess computers can teach you all the basics of the game and keep up with you even if you go on to become a top club player.

SciSys has been at the forefront of this development and has been responsible for many of the interesting innovations. It is the only chess computer under Swiss management, and I look forward to a long and productive relationship with SciSys and with you who you have chosen their computers.

I wish you enjoyment and satisfaction from your SciSys chess computer — and who knows, maybe we'll meet in combat across the chessboard in the future!

Good luck

Garry Kasparov

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FEATURES

1. **Battery compartment** (in base of set)

2. **Chess piece storage zone**

3. **Sensor chessboard**
   Each square of the chessboard has a built-in sensor that registers piece movement.

5. **Lights**
   The computer uses the 16 lights around the edge of the board to indicate game moves, side to play, check, draw or mate. They are also used to verify the board position, display the level of skill and to give you an insight into the thought process of the computer.

Switches

4. **ACL**   This switch at the back of the computer can be used in case of disturbance to clear the memory and reset the computer.

6. **GO**   Switches the computer on. Play is resumed at the point where the computer was switched off.

   STOP   Turns off the computer. The current position is stored in memory for up to two years.

Keys

7. **NEW GAME**   Press to reset to the initial position for a new game.

8. **EVALUATE**   Press while the computer is thinking to see how the search is progressing and who the computer thinks is winning.

9. **LEVEL**   Press to select level of skill.

10. **DISPLAY MOVE**   Press while the computer is thinking to see which move it is considering.

11. **NON AUTO**   Used to enter a sequence of moves

12. **STUDIES**   Press to select "studies", i.e. special built-in positions you can play against the computer (see Chapter 18).

13. **TAKE BACK**   Press to take back last move.

14. **HELP**   Sets help levels F, G or H:
   Level F = Full help
   Level G = Game normal: beep only
   Level H = Hush: silent

15. **PLAY**   Press to force the computer to play the next move.

16. **Piece keys**   These six keys are used to verify board position

Note: PLAY, DISPLAY MOVE AND EVALUATE may be pressed when the computer is thinking, all other keys only when it is your turn to move.

Introduction

Your Kasparov chess computer is programmed to play chess with you and to teach you more about this great game. It automatically registers your moves on its built-in sensor chessboard, has eight levels of skill and is especially programmed for fast response. The computer also has a number of novel coaching features which make it ideal for beginners and casual players who wish to improve their game.

In normal games the computer will monitor your moves and make sure that they do not violate the rules of chess. It will help you learn different openings and suggest moves for you when you need help. If you are a beginner the computer will warn you when your pieces are threatened and let you take back a move if you commit a blunder. While it is computing its moves it will even show you the move it is considering and tell you what it thinks of the position.

With your Kasparov chess computer you can learn and practise the easy way. It encourages you to improve your chess so that you enjoy the game more. Soon you should be able to beat the computer on the lower levels and switch to a higher one for challenging games. Once you begin to hold your own on these levels you will know that you are a proficient player and have nothing to fear from average human opponents.

As your interest in chess develops you will want to take a look at the eight built-in chess studies and solve them with the help of the computer. This novel feature gives you interesting insights into high-class chess and many additional hours of pleasure with your Kasparov chess computer.

Important note

This computer knows all the chess rules, including castling, en passant, and stalemate. Sometimes it may appear to be playing irregularly when in fact it is obeying the rules of the game. In case you are not very familiar with the game we have included a copy of the Rules of Chess. If you need additional information your local library is sure to have several books on the subject.

1. Getting started

Your Kasparov chess computer contains the latest in single-chip microcomputer technology and gives you over 1000 hours of play on three AA cells (alkaline). Open the battery compartment and insert the batteries as shown in Fig. 2.

Set up the chess pieces in the opening position and slide the STOP/GO switch to the position marked **GO**. The computer is now ready to play a game against you. If it fails to react properly — static discharge can sometimes cause it to lock up — use a pin or any other sharp object to activate the ACL switch located at the base of the set. This will clear the memory and reset the computer.

2. Setting the level of skill

The computer has 8 levels of skill which may be changed at the beginning or at any time during a game (but only when it is your turn to move).

Level	Average response time per move
1	1 second (handicap)
2	2 seconds (handicap)
3	3 seconds (switch-on level)
4	5 seconds
5	15 seconds
6	60 seconds
7	75 seconds
8	unlimited (user controlled)

The above times are averaged over a large number of moves. Depending on the stage of the game and the tactical complexity of a position the computer may take considerably more (or less) time on individual moves. On level 8 the computer will go on thinking until interrupted by the user (see Chapter 10).

When you press **LEVEL** the computer will use the lights on the left side of the board to display the level currently set. Keep pressing **LEVEL** until the level you want is displayed.

3. Your moves

To make a move first press down on the piece you wish to move. You will hear a short beep. Place the piece on its destination square and press down again. You will hear a second beep and a light to the left of the board will begin to flash. This means that the computer has accepted your move and has started to compute its reply.

Note: At the beginning of a game the reply will usually be instantaneous on any level because the computer is playing moves that are stored in its "openings book".

To make a capture you only have to key in the move of the capturing piece, when castling only the king's move. When a pawn promotes it is automatically changed into a queen.

4. Computer moves

The computer indicates its own moves by sounding a beep and turning on two lights on the side of the chessboard. These lights indicate the horizontal row and vertical column of the piece the computer wishes to move. Press this piece down on its square. The computer will now show you where the piece must go. Move the piece to the square indicated and press down to complete the move.

Note: Your Kasparov chess computer knows how to "underpromote" in exceptional circumstances. To check if this has happened you must verify the position (as described in Chapter 16) after it has made its move.

5. Illegal moves

If you attempt to make an illegal move the computer will sound a double beep (high-low) and show you where the piece you are trying to move came from. You may place the piece on a legal square or on the original square and move another piece. You will also hear the error beep if you do not execute a computer move correctly or press an improper panel key.

6. Check, Mate, and Draw

When the computer puts your king in check you will hear an additional beep and the CHECK lights at the bottom of the board will flash. If a game ends in checkmate the MATE lights will flash. and in case of a stalemate the DRAW lights will be turned on

7. New game

To start a new game wait until it is your turn to move and then press **NEW GAME**. You will hear a triple beep (high-low-high) which indicates that the computer is ready to play from the initial position. The level of skill remains unchanged.

8. Taking back moves

To take back a move simply press **TAKE BACK** when it is your turn to play. The computer will help you to retract the last two moves (one for Black and one for White) by showing you which pieces were moved and where they came from.

9. Changing sides

If at any time during a game you wish to change sides with the computer you may do so by pressing **PLAY** instead of making your move. The computer will make the next move for you and you can go on playing for the other side. If you want to play a game with the black pieces, press **NEW GAME** and **PLAY**. The computer will make the first move for White and you can play the game with the black pieces.

You can change sides as often as you like. You can even press **PLAY** after every move and make the computer play the entire game against itself. The **PLAY** key is also useful when you need help and want the computer to suggest a move for you.

10. Interrupt

If the computer is spending too long over a move you can interrupt it by pressing **PLAY** which will cause it to stop computing and play the best move it has found so far. This feature is especially useful in level 8, in which the computer will go on thinking until you interrupt it by pressing **PLAY** unless there is only one move it can play or it finds a mate in one, two or three.

11. Non Auto function

Pressing the **NON AUTO** key turns off the Automatic Reply function, so in which it will not compute counter moves but only keep track of the moves you enter for both sides, making sure that they are legal. This allows you to enter special openings or to force the computer to play a certain continuation during a game. To return to normal play press **NON AUTO** a second time.

Note: Pressing **NEW GAME** always cancels the non auto function

12. Computer as referee

NON AUTO is also useful when you play a game with a friend on the sensor board. The computer will act as a referee and protest if anyone makes an illegal move. And each side can at any time ask the computer for advice by pressing **PLAY** which in turn allows you to use the Evaluate and Display Move functions.

13. Evaluate

Try holding down the **EVALUATE** key while the computer is thinking. Watch the board lights. At the bottom they will start to cycle, a new light coming on every time the computer has examined 250 positions in its search for the best move. At the same time the lights on the left side of the board will tell you what the computer thinks of the current position. You can watch the evaluation change as the computer looks at more and more positions.

The computer evaluates positions on a scale of 1 to 8. In a balanced position lights 4 or 5 will be on. If white's position improves then the light number may increase to 6, 7 or 8. Light 8 represents a very significant material advantage for white — probably a won position. In this situation the computer may indicate it wishes to resign by switching light 1 on instead.

14. Display move

Unlike a human being the computer is always prepared to tell you which move it is considering. Just press and hold down **DISPLAY MOVE** while it is thinking. The computer will show you the best move it has found so far by turning on the "from" square for two seconds and then the "to" square for one second. You can watch how it changes its mind as it computes deeper.

An experiment: Press **NEW GAME**, set level 8 and then press **NON AUTO**. Now enter the moves   1. e2-e4 e7-e5   2. f2-f4 Bf8-c5   3. f4xe5 and press **PLAY**. If you now press **EVALUATE** you will see light 6 is on because the computer thinks White is a pawn ahead. Press **DISPLAY MOVE** to see which move it is considering. After some minutes light 1 is suddenly turned on, indicating that the computer now thinks the position is totally winning for Black. Press **PLAY** to see the killer: 3...Qd8-h4 + ! You can play on with the white pieces to see how this move wins a whole rook for Black.

15. Game memory

You can interrupt a game at any stage (even when the computer is thinking) simply by turning it off. Play is interrupted and all lights are turned off to conserve battery power. The computer will "remember" the position for up to 24 months and be ready to resume play when you turn it on again.

16. Verifying piece positions

If you upset the pieces or for other reasons are not sure
whether the board position is correct you can ask the computer
to show you the proper location of each piece. To do so press
one of the piece keys when it is your turn to move. The
computer will use the board lights to show you where that piece
is located. Press the piece key again to find further pieces of
the same kind on the board (a double beep indicates that there
are no more of the piece selected).

You may verify the position of each piece by pressing the
corresponding piece keys. If the board lights are steady the
computer is showing you a white piece, if they are flashing the
piece indicated is black.

17. Help levels

When you switch the computer on for the first time or when you
press **NEW GAME** the normal help level "G" (Game) is set. You
can confirm this by pressing **HELP**. The G light at the bottom of
the board will be turned on. Help level G simply means that you
will hear a beep whenever a piece or a key is pressed.

If you press **HELP** again, then the H light turns on. On help level
H (Hush) the computer remains completely silent during the
entire game. Of course you must watch the indicator lights and
press pieces and keys carefully when playing without sound.

Pressing **HELP** a third time sets the help level to F (Full help). In
this special mode the computer will sound the normal beep, but
it will also give you additional help during the game:

1. During the opening it will warn you when you play a move that
   it does not know, i.e. one that is not in its "openings book". It
   does this by sounding a double beep and not computing a
   reply. You can take the move back by pressing **TAKE BACK**
   and try another move, or you can simply press **PLAY** to
   continue the game in the normal fashion.

2. When one of your pieces is in danger, i.e. it is attacked by a
   piece of lesser value, then the computer will sound a low
   warning beep and flash the square of the endangered piece
   for about seven seconds.

18. Special study positions

Your Kasparov chess computer has eight built-in study positions
which you can try to solve with its help. These are selected by
pressing **STUDIES**. Press this key once and you will notice that
the H light at the bottom of the board lights up. This means that
the computer is ready to go through study position H with you.
Press **STUDIES** again to choose position G. Each time you
press this key a new position is loaded into memory and the
lights at the bottom of the board tell you which one it is. The
playing level is automatically set to 4 and the help level to Full
Help. You will find diagrams of all study positions on page 51
You can also reconstruct the position quite easily by using the
"verify position" feature described in chapter 16.

The studies are meant to entertain you, to improve your knowledge of chess, and to give you additional hours of enjoyment with your Kasparov chess computer. Once you have chosen a position you should study it carefully and try to find the correct moves for White. The computer knows the principal lines of attack as analyzed by the masters and will help you to solve the study in the following way:

Enter each white move as in a regular game. If a move is not in the solution library you will hear a double beep and the computer will not play a countermove. Use **TAKE BACK** to retract this move and try another one. When you play the correct move the computer will reply instantly with the best black defence. If you cannot find the solution yourself press **PLAY** and let the computer show you how White must play.

Once you have played successfully through the full sequence of master moves in the solution library, you will hear a double beep and the computer will not play a countermove. You may continue the game, and it will defend tenaciously, if you press **PLAY**.

19. The studies

Below you will find a list of each position and some hints on how they must be handled. If you want to solve the studies without any assistance then do not read the rest of this Chapter. Select the positions as described above and then try to solve them on your own. The computer will warn you when you go wrong.

Position H: White to play and win.
You may be skillful enough to reduce your opponent to a bare king, but do you know how to put him away? The white king and rook must work together to trap the black king in a corner. If White plays perfectly he can mate in eight moves.

Position G: White to play and win.
In order to shepherd his pawn to its queening square the white king must first gain the "opposition". Advanced players know this concept by heart: If two kings are facing each other on the same file or rank with only one empty square between them, then the player without the move is said to have the "opposition". Gaining the opposition is almost always an advantage in pawn endgames since it allows one to gain territory and penetrate the enemy position.

Position F: White to play and draw.
Knowledge of position G should help you to understand the drawing method here. White, who is in grave danger of losing, must play a surprising move to deprive Black of the "opposition" and hold him to a draw.

Position E: White to play and win.
Some tactical themes occur frequently and belong to the arsenal of all good players. This position illustrates the "skewer". Black must not move his king to the 6th rank, otherwise White would check with the rook, promote his a-pawn and win quite easily. Black's king and rook are forced into a fatal line up along the 7th rank, after which White uses a deadly skewer to win the black rook. Without an awareness of this tactic White could not win the game, despite his three-pawn advantage!

Position D: White to play and win.
In this position taken from a game Capablanca—Tanerow, New York 1910, the white queen is attacked by the black bishop on e5. The legendary Capablance, who was World Champion from 1921 to 1927, took just a few brilliant moves to dispose of his opponent. Can you find them?

Position C: White to play and win.
Some games of chess become classics, enjoyed and admired as works of art by successive generations of chess players. This game between the American genius Paul Morphy and the Duke of Brunswick is reputed to have taken place during an opera! Even after you have found the correct attack you should play through the position a number of times as the computer will try different defences for the black side.

Position B: White to play and win.
This position was taken from a game Alekhine—Grunfeld, Carlsbad 1923 (with the colors reversed), which, "some competent critics have considered the finest ever played" according to Grandmaster Reuben Fine. Here, too, the computer will defend the position in different ways, so play through the position a number of times.

Position A: White to play and win.
This position illustrates the dream of every chess player. It is taken from the game Adams—Torre, New Orleans 1920, and contains a series of astonishing sacrifices of great beauty and originality. White could give a "back-rank mate" if the square e8 were not so well protected. So he attempts to divert the black queen or the black rook on c8 from their defence of this square. If you do not understand the moves the computer plays for Black then try playing other moves against the computer. Select position A, press **PLAY**, make a different black defensive move (the computer will complain) and press **PLAY** again. You will soon realize why Black was so cautious.

20. The ACL key

Computers sometimes "lock up" because of static discharge or some other electrical disturbance. If this happens take out the batteries use a pin or other sharp object to press the ACL key in the base of the set for one second. This resets the computer and clears its memory.

21. Care and maintenance

Your computer is a precision electronic device. Do not subject it to rough handling or expose it to extreme temperatures or moisture. Do not use chemical agents to clean the set as these may damage the plastic. Weak batteries should be replaced promptly as they might leak and cause damage to the computer.

22. Technical specifications

Processor speed:	600 KHz
LED lamps:	16
Keys:	15
Power consumption:	0.01 W
Batteries:	3 AA "penlite" cells (AM3, R6)
Battery life:	1000 hours (alkaline batteries)
Dimensions:	172 x 135 x 27 mm
Weight:	0.4 Kg (without batteries)
Playing strength:	For beginners and casual players

SciSys reserves the right to make technical changes without notice in the
interest of progress .

23. Troubleshooting guide

	SYMPTOMS	POSSIBLE CAUSES	WHAT YOU SHOULD DO
1.	The computer does not react, behaves erratically or "freezes" in the middle of a game	Batteries weak or bad	Replace batteries
		Batteries not inserted properly	See Fig. 2.
		Static discharge or electrical disturbance has caused the computer to lock up	Press ACL key as described in Chapter 20
2.	The computer refuses to accept a move or key presses but keeps sounding the error beep	Is it your turn? (look at the color lamps) Is your king in check? (CHECK lamp) Will your move put your king into check? Are you trying to castle incorrectly? (check the rules) Did you move the rook first when castling?	Make sure you are familiar with the chess rules (read the "Rules of Chess" manual). Use the piece keys to confirm the board position, use TAKE BACK to reconstruct the last move.
		The computer is still thinking (color light flashing).	Press PLAY to interrupt the thought process.
		The computer is trying to show you a move (perhaps from the last game)	Press a piece on the squares indicated and then press NEW GAME
3.	The computer cheats or makes illegal moves	It has made a special move like — En passant — Castling (king or queen side) — Pawn promotion	Make sure you are familiar with the chess rules (read the "Rules of Chess" manual). Use the piece keys to confirm the board position, use TAKE BACK to reconstruct the last move.
		Your board position is not correct, some pieces have been displaced	Verify the board position (see Chapter 16)
		Batteries are running out	Replace batteries

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	SYMPTOMS	POSSIBLE CAUSES	WHAT YOU SHOULD DO
4.	The computer will not play a move	Non auto function is on	Press **NON AUTO** to turn it off, then press **PLAY**
		You are in Help mode F and have made a move that is not in the openings (see Chapter 17)	Press **PLAY** to continue or **TAKE BACK** to try another move (see Chapter 18)
		You are playing a study position and have made an incorrect move (see Chapter 18)	Press **PLAY** to continue or **TAKE BACK** to try another move (see Chapter 18)
5.	Computer is silent	Help mode H is set (see Chapter 17)	Press **HELP** twice to set help mode G
6.	Chessboard square or key does not respond correctly OR Lamps do not come on correctly	Faulty contacts. Check as follows: Remove batteries, re-install them, hold the **PLAY** key down while switching the computer on. You can now test each square and key. Press the ACL key in the back to return to normal play.	Consult service centre if error persists

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