

Mephisto[®]

ROMA 68000

ROMA 68020



INSTRUCTIONS

Dear Reader!

We would like to congratulate you on the purchase of your new MEPHISTO ROMA.

The 7. Microcomputer Chess World Championship was held in 1987 in Rome (Italy). At this event the MEPHISTO ROMA program beat the only challenger by winning every single game. The MEPHISTO ROMA program won the first, second and third places, the team championship and therefore outshone the competition for the fourth time in a row.

The outstanding quality of the games played proves that Richard Lang, almost definitely the World's best chess programmer, has been able to improve his program once more. The MEPHISTO ROMA program has been improved over previous World Champion versions in the following areas:

- Openings: Greatly increased openings book with over 5,000 lines and 40,000 positions. Recognition of irregular moves in openings which lead back to theory positions (even after changing sides).
- Middlegame: Extended chess strategy concerning Pawn positioning and movements up to complicated strategies such as minor attacks on the Queen's flank. Vast improvement of combinational abilities and tactical strength. New, original strategies for attacks on the King which even include sacrifices. A new element of 'aggression' helps the MEPHISTO ROMA to determine the course of a game in its favour often during the early stages of the middlegame.
- Endgame: Improved manoeuvring of free Pawns.
- Blitzchess: The greatly improved playing strength in this area has already made life difficult for GM's!

We are proud to be able to offer you the very best of that which is possible in both hardware and software. We are sure that your (almost ingenious) chess partner will give you many hours of chess pleasure.

Your MEPHISTO team

Hegener + Glaser AG, München

List of contents

- A) General information
 - A1) Description of the computer
 - A2) Advantages of the MODULAR SYSTEM
 - A3) The DIALOGUE SYSTEM and functions (MODES)
- B) Playing against MEPHISTO (PLAY mode)
 - B1) Preparation for a game
 - B2) Making moves
 - B3) Capturing moves and special moves
 - B4) Mistakes and how to correct them
 - B5) Ending a game
- C) INFORMATION (INFO) mode
 - C1) Mainline (development of a game)
 - C2) Position evaluation
 - C3) Obtaining comments
 - C4) Analysis depth, branch, move counter
 - C5) Four-time chess clock
- D) POSITION (POS) mode
 - D1) Checking the position
 - D2) Entering a new position
 - D3) Changing a position
- E) MEMORY (MEM) mode
 - E1) Entering moves, playing these backwards and forwards
 - E2) Analysing games with MEPHISTO
 - E3) MEPHISTO as a referee
- F) FUNCTION (LEV) mode
 - F1) Playing levels
 - F2) Rotating display
 - F3) Automatic games
 - F4) Chess instructor
 - F5) Turning the board
 - F6) Move generator/best move
 - F7) Opening book (chess theory)
 - F8) Sound generator
 - F9) Summary of special functions
- G) Mistakes and how to correct them
 - G1) The most common operating mistakes
 - G2) MEPHISTO self-test routine
- H) Summary of instructions
- I) Technical data

A) General Information

A1) Description of the computer

All the chess-computers which belong to the MEPHISTO modular family have been constructed so that it is possible for the user to exchange the computer and the program on his own and thus keep up with the latest developments in technology. This means that any MEPHISTO MODULAR, EXCLUSIVE or MÜNCHEN can be upgraded to the ROMA machine using the ROMA modules. Let us briefly describe the components which your computer consists of: the first part of the computer you can see is the board with LED's (small red lights) on each square. The LED's show the moves made by the computer on the board. Hidden beneath the board are important sensors. You will probably have noticed that the chessmen which are supplied with your set have a magnetic base. These magnets are detected by the sensors and allow MEPHISTO to recognize when you move pieces on the board.

Note:

Your MEPHISTO MODULAR, EXCLUSIVE or MÜNCHEN has room for three modules.

If you own a MEPHISTO EXCLUSIVE or MÜNCHEN you must pull the drawer open to see the modules which are built into the computer. With the MEPHISTO MODULAR board however, the three modules are exposed at the bottom of the computer. Your MEPHISTO ROMA has three modules as you can see. The first is a keyboard module with 18 keys via which you can ask MEPHISTO for comments although this is not necessary to play games. The next module is a display module which allows you to check the moves being analysed the number of moves played, the amount of time left in a game etc. The third module is the one which contains the World Champion program (and an extra power connector for an adapter).

Let us now briefly describe how to take your MEPHISTO computer apart. First switch the computer off. Next (if you have one), pull the drawer out as far as it will go, then place your finger on the top right hand of the drawer, push the plastic catch away to the right lightly and tilt the frame of the drawer upwards. The modules are then exposed to you properly. You can remove the modules with a short tug and can replace them (in any order you like) by pushing them in until they slot firmly into place. You will have noticed the jackplug on the program module on the bottom left hand corner. If you buy a ROMA module set and wish to upgrade a computer which was built before 1986 then you should plug in the adapter to the module to power the computer. Obviously the on/off switch is then without function. If in any data about which jackplug you should use (that on the board or that in the module) please ask your retailer. Please make sure only to use the HGN5004A (or international equivalent) adapter. Using any other adapter could damage the costly electronics in your MEPHISTO beyond repair and render your guarantee invalid.

A2) Advantages of MODULAR SYSTEM

Most people, at least in Europe, are right-handed, a fact which has influenced the design of most devices, including chess-computers. Not so with your MEPHISTO chess-computer.

Would you like to have the keyboard on the left and the display on the right? No problem at all - go ahead and swap the modules round. You can even experiment and exchange the modules until you find the combination which suits you best both optically and for use. There is only one restriction: all the modules must remain in the computer and you can only swap them when the unit is switched off. Otherwise your MEPHISTO could heave a hefty sigh and resign - which could mean an expensive repair. The advantages of the MODULAR CONCEPT are naturally not limited to the positioning of the modules alone; future technical improvements, such as better programs, faster microprocessors or better displays, can be simply built into the unit by yourself. An example would be to upgrade the MEPHISTO MODULAR/EXCLUSIVE/MÜNCHEN to a MEPHISTO MODULAR/EXCLUSIVE/MÜNCHEN fitted with the ROMA-module.

In this way, your MEPHISTO is equipt to keep pace with the most modern and powerful chess-computers of the future.

A3) The DIALOGUE SYSTEM and functions (MODES)

Most players wish to concentrate totally on the game whilst playing. For this reason we have constructed your MEPHISTO ROMA so that you only need to switch on, set the playing level and can then concentrate on only moving the pieces on the board. For those owners who wish to do much more with their computer, your MEPHISTO offers a series of possibilities which are logically grouped together in five modes. The five modes are as follows:

PLAY mode (CL-key)

Whilst in this mode you can play a game against MEPHISTO or continue a game from a pre-selected position.

FUNCTION mode (LEV-key)

Whilst in this mode you can set the playing level and select a number of special functions.

POSITION mode (POS-key)

Whilst in this mode you can check the position on the board e.g. in case of errors, or you can change the position i.e. remove pieces from the position or enter a new position. If you would like the computer to analyse a chess-problem position you would also use this mode to set the position up.

MEMORY mode (MEM-key)

Whilst in this mode you can enter moves or move sequences and take these back again. This allows you to replay and analyse a game or use the computer as a referee and adviser.

INFORMATION mode (INFO-key)

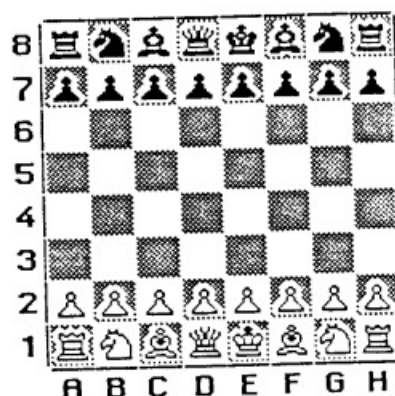
As the name tells you the computer offers you various pieces of information in this mode. This can be the number of lines analysed, the time needed for the analysis, the position evaluation and much more. This mode is also used to show you when the game has been ended by checkmate, resignation, stalemate etc.

When you switch the computer on, you are automatically in the PLAY mode. Via the PLAY mode you can reach the other modes by using the respective key (LEV, POS and MEM) but not when the computer is analysing. You can only do this when it is your turn to move i.e. if you wish to change the playing level it must be your turn to move and you must be in the PLAY mode. You can then use the LEV-key to enter this mode. Return to the PLAY mode using the CL-key. If you wish to change from one mode to the other then you should also return first to the PLAY mode. This step is described in detail in a later chapter.

B) Playing against MEPHISTO (PLAY mode)

B1) Preparation for a game

Once you have set up the chessmen on your MEPHISTO as shown below, make sure that the switch of the computer is in the OFF-position (towards the back of the computer) then plug the adapter into the mains before connecting the small jackplug to the computer.



If you wish to play with Black against the computer but so that you have the keyboard in front of you then it is possible. First set up the black pieces at the bottom of the board and the white pieces at the top. In other words exactly opposite to the position shown above. Then read special section F5 which tells you how to continue from this new position on the board.

Assuming that you wish to play with the white pieces from the bottom of the board and have set up the pieces as shown above, you can now go ahead and switch your MEPHISTO on. Check that all the pieces are correctly standing on their squares (none of the LED's should be flashing) and "PLAY" should be shown in the display. The computer is now ready to play. When switched on, the computer is set to level 2 (LE 02) which means an average response time for the computer of three seconds per move. If you wish to change the playing level then you can do this according to the information shown in section F1.

B2) Making moves

You are now ready to start playing. First lift up the piece which you wish to move and you will see that the LED on this square begins to flash. When you replace this piece on another square the LED will light up shortly and then the display will start to flash as the computer analyses. This means that the computer has registered your move and is thinking about its reply. At the beginning of the game this will happen so quickly that the computer will play a responding move almost immediately.

When MEPHISTO has found its replying move it will sound a double beep and show the move to be made in its display. What is shown in the display are the co-ordinates of the squares from which the piece is moving and the square to which it is to be moved i.e. if the computer shows "G8F6" then it wishes to move the piece from square G8 to square F6. To make sure that you play the right move the LED's of these two squares are flashed on the board. Make the computer's move as you did your own and you will see that the two LED's are switched off. It is now your turn to move again.

The reason why MEPHISTO can play its first moves at the beginning of the game so quickly is because it will play from an opening book stored in its memory. You can read about this in sections E2 and F7.

Don't be surprised if the display suddenly shows three dots between the letters or numbers. This only means that MEPHISTO wishes to tell you something. You can find out in section C3 how to call up this information. Basically when the display is flashing the computer is analysing. It is your turn when the display is steady.

Important note:

Make sure you lift the piece being moved from the board and replace it on its new location. Do not slide the piece across the board. This would only confuse the sensors of the computer and would mislead the machine i.e. if you wish to move a Rook from A1 to D1 and you push it across the board then the move will first be registered by sensor B1. The sensor will then tell the computer that the Rook has moved from A1 to B1 and will not wait anymore. To avoid mistakes such as these, lift the piece away from the square and replace it carefully on its new location.

B3) Capturing moves and special moves

Capturing moves:

These are made in the same way as normal moves. Simply lift the captured piece from the board before replacing it by the capturing piece. This applies to your capturing moves as for those of the computer. An "en passant" capturing move is not different to the ones just described. The computer will flash the board LED of the piece to be removed.

Castling:

Whilst castling you must be sure to move the King first and not the Rook (as in the official rules of chess). If you first move the Rook then the computer will assume that you are only moving this piece. When MEPHISTO is castling it will first show its King's move and once you have made this it will show the Rook's move.

Pawn promotion:

If you manage to reach the opposite side of the board with a Pawn then the display will show "Pr- -" (for promotion). Select the key with the symbol of the piece which you wish to have instead of the Pawn (C3 = Knight, D4 = Bishop, E5 = Rook, F6 = Queen). The lines shown in the display are then replaced by the symbol of the new chess piece. Confirm your choice by pressing ENT and continue the game with the new piece. If MEPHISTO promotes a Pawn it will first show three dots in the display. As explained in section C3 you can ask for a comment from the computer and if the computer shows i.e. "Pr d" then the computer wishes to promote the piece into a Queen. If the computer wishes to promote the Pawn into a different piece ("underpromotion") then the symbol of this piece will also be shown in the display. Replace the piece on the board and continue the game.

B4) Mistakes and how to correct them

At the beginning of the game you can refuse to accept the move that MEPHISTO is playing against you. Instead of making the move that the computer shows, press CL and then ->0. The computer will then analyse another move and will forget the first move that it showed you. If the second move which the computer shows you is also not to your liking you can refuse this and ask for another move in the same way. Using this feature you can write down a list of all the alternative moves which could be played in a particular opening.

Interrupting the analysis phase:

Simply press the ENT-key when the computer is analysing. The computer will then stop its analysis and play the best move which it has found.

Changing sides:

Press the ENT-key when it is your move. MEPHISTO will then change sides and play for you. The computer will then continue the game with your pieces and if you press the ENT-key once more the computer will change sides again and you will have the original pieces on your side again. Obviously if you keep pressing the ENT-key the computer will play a game against itself step by step.

Starting a new game:

Press both the RES-keys to cancel the position reached in memory and to return to the basic starting position. All the previous entries including the level setting are then also cancelled. If, however, you only press one RES-key nothing will happen. The use of two RES-keys is simply to make sure that you don't slip and accidentally erase everything in the computer. If you wish to start a new game with the same playing level, you can key-in MEM, ENT, CL which will return the beginning of the game and reset the timesetting to zero.

Illegal moves:

If you make an illegal move MEPHISTO will protest with a single beep and will show "Err 1" in the display. Simply take the incorrect move back and continue with a legal move.

When pieces are knocked over:

If it is your turn to play then the computer will simply flash the respective square. Set up the piece again on this square and continue as normal. If however it was Mephisto's turn to play the square will only flash after the computer has shown its next intended move. You can replace the piece either then or before this (if you are sure where it was standing).

Pieces incorrectly placed on squares or replaced on wrong squares:

You will probably notice this when the computer protests that one of your moves is illegal although you think that it is correct. Take this move back then switch into the POS mode and check the position on the board (see later chapters on how to do this). When you have checked the position on the board you can either alter the position so that the computer was right or you can alter the position to suit your own opinion (read in later chapters how to do this).

Take back of moves:

If you have lifted the piece from the board but have not yet placed on its new location then you can simply replace it if you change your mind. If however you have already made the move and the computer has started to analyse you must first wait until the computer plays the move (or press ENT to end the computer analysis), make the move and then take it back. When it is your turn to play you can take back any number of moves you like by playing them in reverse on the board. Obviously pieces which were captured before must be replaced. As not everyone can remember which moves were played and therefore can not simply play them in reverse on the board, we suggest that you use an alternative method to take moves back via the MEM mode (see chapter E1).

B5) Ending a game

If you manage to checkmate MEPHISTO the computer will show this in the display. If the computer manages to checkmate you then three dots (see section B2) will be shown in the display. You can then call up the information as described further on in the instruction manual. If you do not do this and try to make a move although checkmated MEPHISTO will obviously refuse to accept this move.

If you ask the computer for a position evaluation (see section C2) and the computer shows the number "-9.99" in the display, then MEPHISTO has given up the game. Some players regard values below "-8.00" as a resignation on the part of the computer. Despite this the computer will not automatically give up the game. This is logical as it is always possible that you will make a mistake. You can try your luck by continuing the game if you are not 100% sure that you will win or if you wish to test your endgame ability.

If MEPHISTO shows a value of "9.99" then it believes that it has won the game. You can either accept this and resign or continue the game to see how the computer will checkmate you.

If a draw is reached e.g. by a threefold repetition of the position, or due to the 50-moves-rule, then MEPHISTO will show three dots in the display and refuse to accept further moves. Using the information in section C3 ask for a comment from the computer. If you ignore this and try to make a move the computer will show "Err 1". You would then have to press CL to take back this error report. The same applies if you reach a stalemate position.

C) The INFORMATION (INFO) mode

In contrast to the other modes available to you can always activate the INFO mode during a game. This means even when the computer is analysing. When the computer is thinking about its own moves then you can use the INFO mode to look into its strategic considerations (something you could not do with a human player!).

C1) Mainline (development of a game)

Whilst MEPHISTO is analysing a move you can press the INFO-key to see which move the computer is presently considering. The computer is quite sophisticated and therefore does not just examine one move, but a complete series of moves known as the mainline.

Use the ->0-key to check the other moves in the mainline. If you keep pressing the ->0-key then the computer will show you first its move, then the move it expects in reply followed by the move it would make then followed by the replying move etc. If you have given the computer some time to analyse a position then it may show you a mainline development up to 8 plys (half moves) although you may notice that the computer may suddenly switch to a new mainline and start to analyse this.

Obviously if the computer has not had time to analyse the position properly it can not show you a mainline. The display will then only show you four lines (- - - -). If you have paged forwards in the mainline and wish to check the second to third move again then page backwards using the <-9-key.

When it is your turn to play you can use the same key sequence to check the mainline which MEPHISTO has analysed. Starting with the move which the computer made last it shows you the next move which it expects from you (which it thinks it's the best move). Using this method you can obtain a move suggestion. It goes without saying that you can either accept this move and play it, or refuse it and play another completely new move. What is shown in the display need not bother you.

C2) Position evaluation

Regardless of whose turn it is to play, press the INFO-key and then the A1-key. A number will then be shown in the display. This tells you how good or bad the computer sees its position on the board. Generally this evaluation is shown in Pawn units. A minus sign before a number means that the computer sees itself at a disadvantage i.e. losing. If the number is positive (i.e. without a minus sign) then the computer sees itself in a winning position. The evaluation can therefore be from -9.99 (lost game for the computer) to 0.00 (equal for both sides) to 9.99 (computer wins game).

The following list shows you the values of the different chessmen in Pawn units:

Pawn	= 1 unit (basic unit, Pawn unit)
Knight	= 3 units
Bishop	= 3 units
Rook	= 5 units
Queen	= 9 units

As with every strong human player your MEPHISTO will not only evaluate the material value of the position on the board but will also consider positional aspects i.e. if the display shows "5.00" then the computer sees itself at an advantage corresponding to the value of a Rook. This however does not mean that it has a Rook more on the board. It may mean that the computer has a strong positional advantage due to a combination of three Pawns and a strong position.

C3) Obtaining comments

When MEPHISTO has something to tell you it will show three dots in the display. To start to obtain the comment first press the INFO- and then the A1-key. If the game is ended (checkmate or draw) MEPHISTO will then show this instead of a position evaluation. If however the position evaluation is shown continue the sequence by pressing the ->0-key and you will see one of the comments listed below. It is possible that a number of comments will be shown in turn.

After reading the comment you can either continue to the PLAY mode or can press the CL-key to return to the PLAY mode formally.

Possible comments:

Display	Meaning
SCH	Check (by MEPHISTO)
MAt	Checkmate
PAtt	Draw
rE50	Draw to 50-moves-rule
rE 3	Draw due to threefold repetition
M 2	Announcing checkmate in a certain number of moves (here in 2 moves)
Pr d	Pawn promotion by MEPHISTO; (here into a Queen)
EP	Capturing move by en-passant
tHEO	MEPHISTO is still in its opening book (this comment is not shown by three dots in the display can however be called up as previously described).

C4) Analysis depth, branch, move counter

To call up this information press the INFO-key and the C3-key. In order to enable you to understand the information which the computer will then show you, we have to explain a little about the method which the computer uses to find its moves.

The first chess-computers tried to analyse all the possible moves from a particular position. This obviously was senseless (ridiculous moves were also considered), ineffective and required a lot of time. Your MEPHISTO on the other hand is more highly refined. It first searches through all the possibilities (=brute-force method) but only for a few plys (half moves), before then switching over to its selective method. From then on the computer picks out the best moves from those previously listed using the brute-force method. It is obvious that the computer can then find better moves within the same time as previously needed by brute-force computers. Moves which come into question are the so-called lines, variations or branches. These are then added to a list of possible moves in the computer.

The first information shown to you after you press INFO and C3 is the so-called minimal analysis depth (symbolized by the sign "M" in the display). This is the depth to which MEPHISTO has analysed all the possibilities on the board; i.e. "M 02" means that the computer has analysed all the positions possible to a depth of two plys. Next press the ->0-key. This shows you the number of the present branch symbolized by the prefix "A" in the display. Whilst MEPHISTO is analysing then this number is that of the move presently being analysed. If it is your turn to move then this branch number is that of the last move.

If you press the ->0-key again then MEPHISTO will show you the analysis depth which it has reached via its selective method (shown by the letter "S" in the display). This is the number of plys which the computer has analysed using its critical position evaluation capability. The difference to the minimal analysis depth is often amazing. In individual cases MEPHISTO can analyse moves selectively up to 20 plys and can therefore peer deeper into a position than most human players.

By pressing the ->0-key once more the computer will show you the number of moves that have been made in the present game. For example the display may show "nr25", which means that the last move made was the 25th in a game.

Don't forget that when the computer is analysing, the display is flashing. Whilst it is your turn the display is steady.

C5) Four-time chess clock

You can obtain access to the four-time chess clock of the computer by pressing the INFO-key and then the B2-key. If you do this then the computer will show you how much time it has used for its last move (or has used for the present move).

Press the ->0-key again to continue. When you press this for the first time the present analysis time for your move (or the time which you needed for your last move) is shown. When you press the key again the letters "SUM" appear in the display which stand for total. Press the ->0-key once more and MEPHISTO will then show you its own total time in hours and minutes and if you press the key again your own playing-time total in hours and minutes.

You can page backwards again through the clock using the <-9-key.

You can leave the INFO mode and return to the PLAY mode at any time by pressing the CL-key. Regardless of whose turn it is to play, when a move is made the INFO-mode is automatically ejected. If you wish to look into the computer's mind again then you must key-in INFO once more. By the way, you can key through all the information described above whilst MEPHISTO is analysing its next move. This will not disturb MEPHISTO at all and when it has found the best move possible it will send a beep and show the move on the board (whilst automatically leaving the INFO mode).

D) The POSITION (POS) mode

To switch into this mode from the PLAY mode press the POS-key. Note that this can not be done whilst the computer is analysing a move. The computer will confirm you are in the POS mode by showing "POS" in the display.

To leave the POS mode press the CL-key and the display will switch to show you "PLAY" which means that you have returned to the PLAY mode. This is important if you wish to leave the POS mode and switch to a different mode other than PLAY because you still have to switch back first to the PLAY mode before obtaining access to the other modes. If whilst you are checking the position on the board (see later in this section) you wish to exit the POS mode and return to the PLAY mode, you must press the CL-key twice. The first time when you press the CL-key "POS" will be shown in the display. Press CL once more and "PLAY" will be shown in the display.

D1) Checking the position

To check the position on the board first press the POS-key to switch to the POS mode, then continue to press the POS-key. Each time you press the POS-key the display will show you the type and position of a piece. The computer will also light up the LED's on the board to show you the position of the pieces indicated. The following table shows you the symbols used for the different pieces:

♔	= white King	- ♚	= black King
♑	= white Queen	- ♛	= black Queen
♖	= white Rook	- ♜	= black Rook
♗	= white Bishop	- ♝	= black Bishop
♘	= white Knight	- ♞	= black Knight
♙	= white Pawn	- ♟	= black Pawn

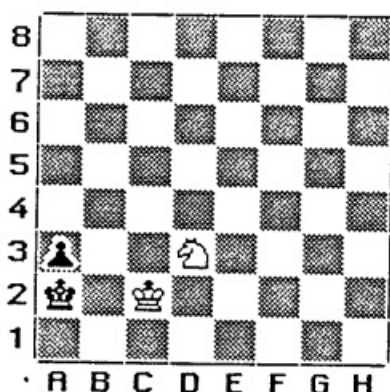
The black pieces are distinguished from the white pieces by the minus sign before the symbol.

Let us check the basic position on the board (starting position) to see how the position check function works. First set up the pieces and then switch the computer on, checking that all the pieces are on their correct squares. Then press the POS-key continually. The computer will then show you the location of the different pieces on the board starting with that on square A1. The computer will work from left to right from bottom to top. If you check the position when it is Black's turn to move, then the computer will start at the top left (at A8) and will work down to the bottom right-hand corner of the board.

After you have checked all the pieces on the board the computer will show "POS" in the display again to confirm that the position has been checked completely.

D2) Entering a new position

To do this you must first clear (or erase) MEPHISTO's internal board (in its memory). This is necessary because the computer automatically has the basic, starting position, in its memory when switched on. To clear the board first press the POS-key and then the ENT-key. Just to be on the safe side the computer asks you whether you wish to erase the board completely. The display will show "CL ? ". If you have changed your mind and don't wish to erase the board press the CL-key. If however you wish to enter a new position press the ENT-key. The computer will then start to ask for the positions of the different pieces on the cleared board starting with the white King (K_ _).



Problem by Otto Dehler

White to play and checkmate in three moves

The diagram above shows you a chess-problem by Otto Dehler:

Assuming you have keyed in the procedure as above then the symbol for the white King is still shown in the display. Simply place the King on square C2. You will see that the display then changes to show "d_ _". If you had a white Queen then you would simply place this on the board as well, however a problem does not have a Queen therefore press the ENT-key in order to tell the computer to move on to the next piece. The computer then continues by asking first for White's Rooks and then the Bishops (of which we have neither) i.e. press the ENT-key. Next the computer will show the symbol for a Knight (S_ _) so continue by placing a white Knight on square D3. Notice that the display still remains set to "S_ _", as there could be more than one white Knight on the board. Press the ENT-key so that MEPHISTO accepts there are no more Knights and moves on to ask for the white Pawns. We do not have a white Pawn either therefore press the ENT-key once more. The computer will then start to ask for the black pieces (identified by the minus sign in the display). The computer asks in the same way as mentioned above. The key-in procedure should be as follows if you have not yet understood the principle:

Place black King on square A2 (display switches and asks for Black's Queen), ENT (no black Queen), ENT (no black Rook), ENT (no black Bishop), ENT (no black Knight), place black Pawn on square A3, ENT (no further black Pawns).

After you have pressed ENT for the last time MEPHISTO should show "POS" in the display and is asking you to run a position-check just to be on the safe side. You can then either continue to press the POS-key to check the position you have just entered, or press the CL-key to return to the PLAY mode(the display shows "PLAY").

After you enter the position it is always White's turn to move. However, if you wish Black to play the first move key-in the following procedure as soon as "PLAY" is shown in the display:

Key	Display	Meaning
POS	POS	Switch on POS mode
<-9	- _ _ _	Black to move
ENT	POS	
CL	PLAY	MEPHISTO is ready to play

If you have changed your mind and wish White to play the first move again then key-in the same procedure but exchange the <-9 for the ->0-key. When you are sure that the position is correct and you are already to move you can either play the next move from the entered position or press the ENT-key to make MEPHISTO play for the side who's turn it is.

There is another alternative for entering a position on the board. First set up the position on MEPHISTO's sensor board with the computer switched off. Next switch the computer on, press POS, ENT and the computer will ask "CL ? ". Press ENT to confirm that you wish to clear the board. Continuing in the same way as previously mentioned you can lift up the chessmen on the board (LED blinks) when it is asked for in the display. Pieces which are not in the position on the board are ignored by pressing ENT. After you have entered the position MEPHISTO will again ask you to run a position-check.

The solve chess-problems we recommend that you use the instructions mentioned in section F1 which are especially for chess-problems.

D3) Changing a position

At some time you may wish to have a piece or two more on the board than your electronic sparring-partner. You may also wish to remove one or more of the pieces which the computer has in order to make life easier for yourself. This is all easily possible. This feature is also useful if you wish to analyse positions with different constellations of the pieces.

Let us now learn how to enter a new piece to a position using the chessproblem mentioned in the last section. Let us start by entering a black Bishop on square G5. First simply place the piece on the respective square. We then have to tell MEPHISTO that this new piece is a black Bishop. Do this according to the following key-in procedure:

Key	Display	Meaning
POS	POS	Switch to the POS mode (if not already in POS mode)
<-9	- _ _ _	Black piece
D4	- L _ _	Bishop
G7, E5	- LG5	Co-ordinates of square G5
ENT	POS	Confirm input
CL	PLAY	Return to PLAY mode

If you want to be 100% sure that the piece is now in the position, to run a position check. To erase a piece from the board the procedure is virtually the same with one small difference:

instead of entering a piece you must enter a blank piece (a blank square is placed on the respective square). To remove the black Bishop on square G5 key-in the following procedure:

Key	Display	Meaning
POS	POS	Switch to the POS mode (if not already in POS mode)
<-9	- _ _ _	Black piece
A1	_ _	Blank piece
G7, E5	G5	Co-ordinates of square G5
ENT	POS	Confirm input
CL	PLAY	Return to PLAY mode

If you don't believe this then run a position check once more!

If you wish to remove a piece from a particular position and place it on a new location then using the information above you must first remove the piece and then key it in again at a new location.

MEPHISTO obviously checks that whilst you are entering, moving and removing pieces from positions on the board the rules of chess are not broken.

If you try to allow yourself two Kings (doubling the chances of you being checkmated!) the computer will protest in just the same way as if you try to play without a King. Placing a Pawn on the end of the opposite side of the board will also cause the computer to protest. The computer will show "Err 4" in the display but you can remove this if you correct the position and press CL to return to the PLAY mode. As a sidenote it is possible to have more than one Queen, Bishop, Rook or Knight. This is because it is possible to promote Pawns to these pieces during a game.

E) The MEMORY (MEM) mode

Whilst you are in the PLAY mode and when the computer is not analysing you can enter the MEMORY mode by pressing the MEM-key. The display then shows "MEMO".

Leaving the MEM mode is done in the same way as by the other modes, namely by pressing the CL-key.

E1) Entering moves, playing these backwards and forwards

Entering moves or move sequences is quite simple. First press the MEM-key and then make the moves for White and for Black. Note that you may only enter the moves as if you are playing according to the rules of chess i.e. you may not enter several moves for White and then several moves for Black.

If you reach a position from which you would like to play or would like the computer to play or would like the computer to analyse, press the CL-key to return to the PLAY mode.

Using the built-in memory of your MEPHISTO it is possible to play complete games or just a few moves backwards or forwards. Let us assume that you have reached a position played forwards in the memory mode. If you use the <-9-key you can literally page through the moves backwards. The information shown in the display is that of the last move played in reverse i.e. first the co-ordinates of the objective square and then that of the starting square. To remind you that this is a move played backwards the display shows this information with dots between the numbers and letters. If, for example, your last move was from E2 to E4 with a Pawn, then the display would show "E.4.E.2". At the same time the respective LED's on the squares flash to show you where the move is to be taken back.

Once you have taken this move back you can continue to use the <-9-key to take back further moves. If you wish to, you can take back all the moves of the game right back to the beginning. When you reach the basic starting position (this may not necessarily be the very start of the game, but a position from which you started in the POS mode) the computer will show "StA" in the display. If you don't wish to go back to the beginning of a game you can page back any number of moves and then press CL to return to the PLAY mode. According to who's turn it is to move you can either play for yourself or press ENT to make the computer to play the next move.

To jump back to the very beginning of a game first press MEM and then ENT.

When you take back a capturing move the LED of the square where a piece was originally standing will continue to flash. Using the position check routine you can find out which piece originally stood on the square if you cannot remember. To do this don't forget to press the CL- and then the POS-key.

When taking back a castling move the King's move is shown in reverse, and then the Rook's move (the Rook's move is however not shown in the display, but only by the flashing LED's on the board).

When a Pawn's promoting move is played in reverse then the promoting move is shown in reverse, i.e. the sign for a Pawn is not shown especially in the display. One method to play back quickly is to repage the moves placing any captured pieces back on the board and then, having reached the position from which you would like to continue, run a position check and check all the pieces replacing them as necessary.

If you have paged back too far then all you have to do is to page forwards again through the moves using the ->0-key. Obviously you can only do this up to the position from which you stopped playing. The computer reminds you when you have reached this position by showing "End" in the display.

You may continue the game from any position you like after paging forwards by pressing the CL-key to return to the PLAY mode. As you can see it is easy to obtain any position you like on the board by simply entering the moves in the MEMORY mode. In order to use this very useful feature for analysis purposes we would like to give you some tips in the following section.

E2) Analysing games with MEPHISTO

One of the most important things about chess is the analysis of a game or a position. Once you have reached the critical position in the game by paging backwards or forwards you can switch to the PLAY mode by pressing CL and then play a different move. Having found in which way the computer will react you can take back both the moves (you have to play the computer's move first) and can then try alternative moves. Another idea is just to press the ENT-key to allow the computer to find the next move which it thinks is best.

Using this feature you can analyse the games of other players e.g. master's games from books or magazines. Simply switch your MEPHISTO into the MEMORY mode and play through the game on the sensor board. When you reach a position which you find interesting you can return to the PLAY mode (press CL) and continue with an analysis as above.

Another interesting use of the MEMORY mode is for the preparation and analysis of opening theory lines. As previously mentioned your MEPHISTO contains an opening book which it uses for the first moves in its game, in which approximately 5.000 lines with 40.000 plys of opening theory are stored. During an opening if you wish to know alternatives are available to a particular move then press the CL- and ->0-key to obtain an alternative suggestion, as far as one is available. Repeat this key sequence until there are no more alternatives and MEPHISTO will then leave its opening book and will start to calculate its own move.

It is also possible to feed the computer with your own opening lines. First switch to the MEMORY mode and play the move sequence on the board. Next complete the sequence by pressing the following keys:
 - POS, MEM, POS (the display shows "StA"). This line is then stored until the moment that you switch the computer off. In this way you can store any number of lines up to 200 plys. Moves which you have made and where you have changed your mind and would rather take them back are removed by pressing the <-9-key. When you have completed entering the moves into the computer press the CL-key to return to the PLAY mode (please don't press the RES-keys as you would otherwise erase the lines just entered). MEPHISTO will then keep to the lines you have just stored rather than its opening book. If you play moves out of sequence at the beginning of a game then the computer will recognize this and when you return to chess theory will jump back to the opening book.

If you wish to select one of the openings from MEPHISTO's repertoire in order to analyse this then we recommend that you use the method in the MEMO mode as described above. If you do this then the computer will play the same opening during your analysis and will not select another line.

E3) MEPHISTO as a referee

This function operates in the MEMORY mode in the same way as if you play normal moves (see section E1). The whole idea is for two human players to play against each other on the sensor board of your MEPHISTO. The moves made are then monitored both on the board and are shown in the LCD (display). The referee then makes sure that nobody plays illegal moves, in this case it would show "Err 1" in the display. The computer then also keeps track of the game i.e. stores all the moves in its memory. Using the methods described before (<-9-key and ->0-key) you can page through the moves which you have played in your game.

F) The FUNCTION (LEV) mode

This mode not only allows you to set the playing level of the computer but also gives you access to a large number of special functions. To activate the mode press the LEV-key. Don't forget that this can only be done whilst you are in the PLAY mode and the computer is not thinking. When you have pressed the LEV-key the computer will first show the playing level which has been set; at the start of a game after you have switched on the computer it will automatically be set to level LE02.

If you wish to continue to obtain access to the special functions you can do this by continually pressing the LEV-key. When you do this each of the special functions will appear in turn and these are set either on or off by the computer automatically. You can activate or deactivate these functions as described below in section F2.

F1) The playing levels

As we said before the computer sets itself to level 02 when switched on. If you wish to reset the computer to a different level then key-in the respective number (note that you need to press two keys). For example to set level 7 press the ->0- und G7-keys. Confirm your entry by pressing ENT. If you forget to press the ->0-key the computer will protest with "Err 5" in the display. You would then have to press the CL-key to erase this again.

Your MEPHISTO offers you more than 90 different playing levels, divided into several groups so that players of all classes from a beginner up to master players can find a level which suits them best. If you play against your MEPHISTO regularly you may recognize that you are improving and can set higher levels without you necessarily losing each game against the computer.

Training levels (LE00 to LE09)

These levels are mainly thought for players with little experience. When set to these levels the computer has small amount of time to analyse the position which obviously reduces its playing strength.

You can give the computer a further handicap by deactivating its so-called "permanent brain". The permanent brain function of the computer simply means that the computer uses your time to analyse the position when it is your turn to move as well as its own. If you deactivate this i.e. switch it off, then the computer can only think on its own time which obviously limits the playing strength again.

LE00= 1 sec/move	LE05= 1 sec/move	without "permanent brain"
LE01= 2 sec/move	LE06= 2 sec/move	without "permanent brain"
LE02= 3 sec/move	LE07= 3 sec/move	without "permanent brain"
LE03= 5 sec/move	LE08= 5 sec/move	without "permanent brain"
LE04= 10 sec/move	LE09= 10 sec/move	without "permanent brain"

Beginner levels (LE10 to LE19)

In order to give beginners an even better chance whilst playing against the computer we have built in these special levels. Whilst set to these levels the computer will not always play the best move and may even make mistakes as a human opponent might. These characteristics are most obvious whilst set on level 10 whereas level 19 limits these restrictions i.e. the mistakes are made less often and less important. On average the computer needs about two seconds per move (without permanent brain).

When playing using these levels we recommend that you do not use the alternative move function as the playing strength of the computer is already limited by removing the best moves from the move list.

Handicap levels (LE20 to LE29)

When set to these levels the computer matches the time used by the human opponent. The computer takes the analysis time of the opponent and multiplies this by a pre-determined factor. The resulting time used is on average for all of the moves of a game.

LE20= factor 0,1	LE25= factor 0,1	without "permanent brain"
LE21= factor 0,2	LE26= factor 0,2	without "permanent brain"
LE22= factor 0,5	LE27= factor 0,5	without "permanent brain"
LE23= factor 1,0	LE28= factor 1,0	without "permanent brain"
LE24= factor 2,0	LE29= factor 2,0	without "permanent brain"

When set to a playing ~~level between LE00 and LE29~~ the display will show the analysis time of the present move in minutes and seconds during a game.

Blitz chess levels (LE30 to LE39)

LE30= 2 minutes/game
 LE31= 3 minutes/game
 LE32= 5 minutes/game
 LE33= 7 minutes/game
 LE34= 10 minutes/game
 LE35= 15 minutes/game
 LE36= 20 minutes/game
 LE37= 30 minutes/game

With ^{LE38}~~LE38~~ you can set the total time for the whole game as you wish. Both sides have then the same time.

Let us assume that you wish to allow 7 minutes and 30 seconds for the whole game for each side. You would key this in as follows:

Key	Display	Meaning
LEV	e.g. LE02	Basic level 02
C3, H8	LE38	Level 38
ENT	H _ _	How many hours? (next ENT means no hours)
ENT	M _ _	How many minutes?
->0, G7	M 07	7 minutes
ENT	S _ _	How many seconds?
C3, ->0	S 30	30 seconds
ENT	PLAY	MEPHISTO is ready to play

you can then start to play.

LE30

With ~~LE39~~ you can again set the total time for a game but with each side having different times. This means that handicap games are also possible. Let us assume that you wish to give the computer 5 minutes where you (the opponent) have 10 minutes for the whole game. The key-in procedure is as follows:

Key	Display	Meaning
LEV, C3, <-9	LE39	Level 39
ENT	H _ _	Time setting MEPHISTO
ENT	M _ _	
->0, E5	M 05	5 minutes
ENT	S _ _	
ENT	H - -	Time setting opponent
ENT	M - -	
A1, ->0	M 10	10 minutes
ENT	S - -	
ENT	PLAY	MEPHISTO is ready to play

When set to play a game in the blitz chess level the computer will show the ~~remaining time in its display~~ (countdown system). If you set the time allowed to more than an hour, the display will be shown in hours and minutes, otherwise in minutes and seconds.

Tournament levels (LE40 to LE57)

LE40= 40 moves in 120 minutes
 LE41= 40 moves in 150 minutes
 LE42= 50 moves in 120 minutes
 LE43= 50 moves in 150 minutes
 LE44= 50 moves in 180 minutes
 LE45= 60 moves in 60 minutes
 LE46= 60 moves in 90 minutes
 LE47= 60 moves in 120 minutes
 LE48= 60 moves in 150 minutes
 LE49= 60 moves in 180 minutes
 LE50= selectable average analysis time per move for both sides the same; time check at 40th move and thereafter each 20th move.
 LE51= As LE50 but separate for each side.
 LE52= First time check can be freely selected (X moves in Y hours and/or minutes); same for both sides. Further time checks are made by each 20th move.

Example: 50 moves in 1 hour 30 minutes

Key	Display	Meaning
LEV, E5, B2	LE52	Level 52
ENT	nr _ _	How many moves?
E5, ->0	nr 50	50 moves
ENT	H _ _	How many hours?
->0, A1	H 01	1 hour
ENT	M _ _	How many minutes?
C3, ->0	M 30	30 minutes
ENT	PLAY	MEPHISTO is ready to play

LE53

LE53 = As LE52, however both sides separate.

Example: Computer 50 moves in 1 hour 30 minutes; opponent 40 moves in 2 hours.

Key	Display	Meaning
LEV, E5, C3	LE53	Level 53
ENT	nr _ _	Number of moves computer
E5, ->0	nr 50	50 moves
ENT	H _ _	Time setting computer
->0, A1	H 01	1 hour
ENT	M _ _	
C3, ->0	M 30	30 minutes
ENT	nr - -	Number of moves opponent
D4, ->0	nr 40	40 moves
ENT	H - -	Time setting opponent
->0, B2	H 02	2 hours
ENT	M - -	
ENT	PLAY	MEPHISTO is ready to play

LE54

LE54 = Selectable time setting for first and second time checks, same for both sides.

Example: 50 moves in 1 hour 30 minutes, thereafter 25 moves in 30 minutes.

Key	Display	Meaning
LEV, E5, D4	LE54	Level 54
ENT	nr _ _	How many moves?
E5, ->0	nr 50	50 moves
ENT	H _ _	
->0, A1	H 01	1 hour
ENT	M _ _	
C3, ->0	M 30	30 minutes
ENT	2. Con	2. time check
ENT	nr _ _	How many moves?
B2, E5	nr 25	25 moves
ENT	H _ _	
ENT	M _ _	
C3, ->0	M 30	30 minutes
ENT	PLAY	MEPHISTO is ready to play

LE55

LE55 = Selectable time setting for first and second time checks individual for each side.

Example: Computer: 40 moves in 1 hour 30 minutes, thereafter 20 moves in 30 minutes.
 Opponent: 40 moves in 2 hours 30 minutes, thereafter 20 moves in 30 minutes

Key	Display	Meaning
LEV, E5, E5	LE55	Level 55
ENT	nr _ _	Setting computer; how many moves?
D4, ->0	nr 40	40 moves

Key	Display	Meaning
ENT	H _ _	
->0, A1	H 01	1 hour
ENT	M _ _	
C3, ->0	M 30	30 minutes
ENT	2. Con	2. time check
ENT	nr _ _	How many moves?
B2, ->0	nr 20	20 moves
ENT	H _ _	
ENT	M _ _	
C3, ->0	M 30	30 minutes
ENT	nr - -	Setting opponent; how many moves?
D4, ->0	nr 40	40 moves
ENT	H - -	
->0, B2	H 02	2 hours
ENT	M - -	
C3, ->0	M 30	30 minutes
ENT	2. Con	2. time check
ENT	nr - -	How many moves?
B2, ->0	nr 20	20 moves
ENT	H - -	
ENT	M - -	
C3, ->0	M 30	30 minutes
ENT	PLAY	MEPHISTO is ready to play

LE56

LE56 = Number of moves and analysis time selectable after first time check (same for both sides); thereafter total rest of the time for the game set; time not needed up to 1. time check is transferred.

Example: 50 moves 2 hours 30 minutes, rest of the game in 30 minutes.

Key	Display	Meaning
LEV, E5, F6	LE56	Level 56
ENT	nr _ _	How many moves?
E5, ->0	nr 50	50 moves
ENT	H _ _	
->0, B2	H 02	2 hours
ENT	M _ _	
C3, ->0	M 30	30 minutes
ENT	t.Con	Rest of the game
ENT	H _ _	
ENT	M _ _	
C3, ->0	M 30	30 minutes
ENT	PLAY	MEPHISTO is ready to play

LE57

LE57 = LE56 however individual for each side (compare also LE55).

LE58

LE58 = This playing level and the following levels are especially for tournament games. During these it can happen that one makes mistakes whilst operating the computer which causes the chess clock to be no longer valid. The computer obviously plays according to its internal clock, which, if you have made errors in operating the computer, is then obviously no longer correct. This level allows you to correct the internal clock of the computer.

When the computer has used 10 minutes time the display will show alternately "tAJ?" and the total analysis time for the computer. It will do this for 30 seconds. During this time you can use the arrowkeys (<-9, ->0) to alter the time (in minutes) of the computer's clock. You can either add time or deduct time from the display.

LE58 correspond to LE50 (freely selectable average analysis time per move). Although the function mentioned above is activated.

LE59

LE59 = Corresponds to LE54 (number of moves and time freely selectable for 1. and 2. time check), whereby functions listed under LE58 remain activated.

Important note:

When playing on the tournament levels the display shows the total analysis time in hours and minutes. The computer will always keep to the time limits set. If you exceed the time allowed MEPHISTO will show "tIME" in the display, will however not stop the game. If you press CL the display will return to show the total analysis time.

Analysis and problem chess level (LE60 to LE72)

The levels from 60 to 72 are designed for solving chess problems i.e. "checkmate-in-x". LE61 is for checkmate problems to be solved in one move, LE62 for mates in 2 moves etc. up to LE72 which corresponds to checkmate in 12 moves.

It is best to always pre-select LE60 to tell the computer to search at least for a mate-in-1. This becomes more obvious later on in this section.

First set up the position on the computer's board before switching the computer on and activating the problem chess levels. Then continue as follows (our example is a mate in 6 moves solution):

Key	Display	Meaning
LEV, F6, ->0	LE60	Switch on problem solving level
ENT	Mt ?	Mate in how many moves?
F6	Mt 6	Mate in 6 moves
ENT	PLAY	MEPHISTO is ready to play
ENT		Computer starts to search for a solution

As just mentioned, it is also possible to directly set the respective problem solving level i.e. LE65 for mate in 5 moves. If you do this then the dialogue as described above is no longer necessary and the computer will immediately show "PLAY".

Whilst the computer is searching for a solution you can not use the INFO mode to peer into the computer's mind; the position evaluation is also deactivated. The display will generally show the searching time for the computer in minutes and seconds, or if it needs longer, in hours and minutes.

As soon as the computer has found a solution it will show a key move (starting move) in the display with three dots. When you then ask the computer for a comment the computer will show "M" in the display and a number for the number of moves in which the solution has been found. Normally MEPHISTO will find every possible checkmate up to problems involving 7 moves. More detailed solutions may take longer but may not necessarily be found due to the limitation of the memory of the computer. Please remember that chess-computers are machines and regardless of the make not every computer will find every possible solution.

Some very inexpensive computers find difficult solutions whereas expensive ones don't and vice versa. However, your MEPHISTO ROMA is one of the best problem solvers that is available on market.

One of the nicest things about chess problems is the ability to find alternative solutions. MEPHISTO can help you to do this both quickly and efficiently.

When the computer has found a solution and shows the key move then instead of playing this press the key CL and then ->0. If there is no alternative solution this will be shown in the display otherwise the computer will show "no ".

Import.note:

Please make sure that you switch the problem solving levels off again if you wish to return to a normal game. Otherwise MEPHISTO will refuse to play with you as it will try instead the search for an impossible checkmate.

LE80 to LE98: When you select one of these levels you determine to what maximum depth the computer is allowed to analyse a position (the number of plys it is allowed to search through). For your information we would like to remind you of two concepts in the table below; "brute-force" means that the computer searches through all the possibilities whereas "selective" means that the computer will use certain criteria to find an optimal solution.

LE80=	1 ply	"brute-force",	7 plys	"selective"
LE81=	1 ply	"brute-force",	8 plys	"selective"
LE82=	1 ply	"brute-force",	9 plys	"selective"
LE83=	1 ply	"brute-force",	10 plys	"selective"
LE84=	2 plys	"brute-force",	11 plys	"selective"
LE85=	3 plys	"brute-force",	12 plys	"selective"
LE86=	4 plys	"brute-force",	13 plys	"selective"
LE87=	5 plys	"brute-force",	14 plys	"selective"
LE88=	6 plys	"brute-force",	15 plys	"selective"
LE89=	7 plys	"brute-force",	16 plys	"selective"
LE90=	8 plys	"brute-force",	17 plys	"selective"
LE91=	9 plys	"brute-force",	18 plys	"selective"
LE92=	10 plys	"brute-force",	19 plys	"selective"
LE93=	11 plys	"brute-force",	20 plys	"selective"
LE94=	12 plys	"brute-force",	21 plys	"selective"
LE95=	13 plys	"brute-force",	22 plys	"selective"
LE96=	14 plys	"brute-force",	23 plys	"selective"
LE97=	15 plys	"brute-force",	24 plys	"selective"
LE98=	16 plys	"brute-force",	25 plys	"selective"

Obviously if the computer has to analyse a position to a depth of 25 plys this can take a lot of time, especially when there are still a number of pieces on the board. This is caused due to the fact that there are an immense number of possible lines. For this reason we suggest that you only use the higher analysis levels from LE86 when analysing endgames. Doing this you will avoid that your computer will search for days or even weeks over its next move.

It can also happen that the computer will not always reach the listed maximum analysis depth, especially if it has found a better move or a solution before hand.

LE99 = Correspondence chess level.

The computer will when set to this level analyse until interrupted. Interrupt the computer by pressing the ENT-key which causes the computer to play the next best move it has found until that point in time. During this you can use the INFO mode to select or obtain access to various pieces of information during the analysis of the computer.

Whilst set levels 80 to 99 the computer will show the present analysis time of the move in either minutes and seconds or hours and minutes.

F2) Rotating display

As previously described you can call up various pieces of information during a game. If however you wish to have selected pieces of information automatically shown to you on the display then this is possible via the rotating display function. If you activate this special function then the display will show you in turn the present time for the move, the first to third moves of the mainline, and the position evaluation. These pieces of information are shown to you in a rhythm of one second.

When the computer is switched on the rotating display is set off. To activate the display key-in the following procedure:

Key	Display	Meaning
LEV	LE02	LEV mode (playing level 02)
LEV	Al- -	Rotating display (set off)

As you wish to activate this special function press the ENT-key next. You will then see that the two lines in the display disappear so that only "AI " remains.

This means that the rotating display is now activated.

Please remember:

If you wish to obtain access to other special functions which are obtainable via the LEV mode then you still can not avoid the computer offering you this function. If you wish to ignore the possibility to activate the function simply press the LEV-key to move on to the next special function.

Principle of the function dialog

You can obtain access to all the special functions by continually pressing the LEV-key. The functions are then shown to you (set either on or off) and you can activate or deactivate them by pressing the ENT-key. If the display shows two lines behind the name of the special function then the function is deactivated. If the lines are not there then the function is already activated (set on). Return to the PLAY mode by pressing CL.

F3) Automatic games

The next special function which your MEPHISTO can offer you is to allow the computer to play a game against itself. When the computer does this you don't even need to move the pieces on the board. One of the uses of this function is for analysis purposes, for example, if you reach a position in a game which you are not sure how you would continue (for both sides) then you can switch on the automatic game function. Whilst you go away and do something else the computer will then play the game to the end and after that you can return or page back through the memory to the critical position and then page forwards slowly move for move to see how the game was ended. It is a good idea to set an adequate analysis time level so that the computer can show you a high quality game.

The key-in procedure is as follows:

Key	Display	Meaning
LEV	LE02	LEV mode (set appropriate playing level at this stage!)
LEV	Al- -	Rotating display (set off)
LEV	AU- -	Automatic game (set off)
ENT	AU	Automatic game activated
CL		Start automatic game

It is possible to use the features offered via the INFO mode during automatic games. You can then see for example how many lines the computer has analysed, how long it has taken for this and you may obtain a position evaluation. In order to end the automatic game feature simply press the ENT-key. If the computer is analysing a position at which you would like to take sides then only press the ENT-key when it is the other side's move! MEPHISTO will then play the best move found for this side and you can continue with the side you actually want.

F4) Chess instructor

This unique function is basically designed for learners. In order to use this feature optimally you should give the computer enough time to analyse the position or the game. Set the computer to a minimum of playing level 04.

Key	Display	Meaning
LEV	LE02	LEV mode (last playing level set)
LEV	Al- -	Rotating display (set off)
LEV	AU- -	Automatic game (set off)
LEV	tr- -	Chess instructor = trainer (set off)
ENT	tr	Activate chess instructor
CL	PLAY	Continue playing

Note: The combination of the chess instructor and automatic game functions is not purposeful. Why on earth should MEPHISTO warn itself of weak moves!

You will notice the effect of the chess instructor during a game and only when it is your turn to play. After a certain analysis time the computer may suddenly show four question marks ("????") in the display and sound four beeps. This means that the computer wants to comment on your move. The key-in procedure is follows:

Key	Display	Meaning
INFO	Answering move	MEPHISTO questions the move which you have just made
->0	Following sequence of moves	(As far as calculated) lines which MEPHISTO foresees as a consequence of your move
Al	Evaluation	Shows how highly MEPHISTO evaluates your move as a consequence
G7	Move hint	Only available if enough analysis time given!
->0	Move sequence	The best line for both sides according to MEPHISTO's opinion

If you wish to take back the move which MEPHISTO criticized press the CL-key. This then erases the move from the memory and the LED's on the board show you where to take the move back. Having done this you can continue with another move. If you, however, insist on playing the original move despite MEPHISTO's criticism press the ENT-key to confirm this. MEPHISTO will then continue to analyse and search for a replying move.

Important note:

The chess instructor obviously has its limits. Essentially it will warn you of bad mistakes when the position evaluation jumps to a low value for you. As mentioned before, if the analysis time for the computer is too short then the computer may not be able to make a move suggestion. A complete line may also not be shown after every move especially if the replying move is absolutely obvious.

As the chess instructor is based on the position evaluation system of the computer it can not give you a warning where the computer has not yet calculated a position evaluation. This is the case when the last move made is still part of chess theory i.e. is in the opening book or a move has just been taken back or a position just entered or if you played too quickly and the program has not have a chance to use your analysis time for its own analysis.

F5) Turning the board

This special feature was mentioned right at the beginning of the manual. It can be used to allow you to play with the black pieces from the bottom of the board to the top i.e. with the keyboard in front of you. Selecting this feature is done via the same method as for the other special features:

Key-in LEV until the display shows "bd- -" (function deactivated). Switch on the function by pressing the ENT-key and begin the game by pressing CL. MEPHISTO has turned its internal board (stored in memory) by 180 degrees. Square A1 is now at the top right-hand of the board whereby square H8 is now at the bottom left-hand of the board. Obviously the numbers and letter marked on the board itself no longer apply. MEPHISTO takes account of this in its display.

Combining this special feature with other features is possible.

F6) Move generator / best move

Normally MEPHISTO will always play the best move it can find. This means that from the same position and given the same analysis time, the computer will almost certainly play the same move. One may often however wish to vary the move selected by the computer especially during the beginning of a game. For this reason it is possible to switch the move generator on or off. If you do this then the computer will select a different move from the list of moves which it thinks have the same value. Another consequence can be that the computer will not play quite as strong.

When you activate this function please be careful: the special function which you require is called **best move** and is actually the opposite to the random generator. Obviously the best move function is set on when the computer is plugged in. Therefore we have to switch this off to allow alternative moves to be selected and played. Do this by pressing the LEV-key continually until the display shows "bE ". Then press ENT. This means that the best move function is switched off i.e. the random move generator is activated.

Combining this feature with other special features is possible.

F7) Opening book (chess theory)

As previously mentioned the computer plays its first moves from a stored opening book in its memory. If you wish to switch off the access of the computer to this book you enable it to search for completely new lines which may not belong to chess theory. Do this by keying-in LEV until the display shows "tH ". Set the function on or off as you desire in the same way as mentioned above.

Combining this function with other special functions is possible.

F8) Sound generator

You will have noticed that the computer sounds a beep signal to warn you of changes on the board etc. If however these beep sounds disturb your concentration and you would like to play in absolute silence you can deactivate the sound generator. This is done in the same way as by the other special functions namely by pressing the LEV-key until the display shows "tO " (sound generator switched on). Deactivate the function by pressing the ENT-key.

Combining this feature with other special features is possible.

F9) Summary of special functions

The following is a summary of all the special functions in a complete oversight. If you switch the computer on you will find that the special functions are set either on or off and are shown in the same way below. Remember to activate or deactivate them using the ENT-key. Finally remember that it is not possible to select the special functions whilst MEPHISTO is analysing.

Key	Display	Meaning
LEV	LE02	LEV mode (set new playing level if desired)
LEV	AI--	Rotating display (set off)
LEV	AU- -	Automatic game (set off)
LEV	tr- -	Chess instructor (set off)
LEV	bd- -	Turn the board (set off)
LEV	bE	Best move function (set on) (random move generator off)
LEV	tH	Chess theory (set on)
LEV	tO	Sound generator (set on)
LEV	PLAY	Return to PLAY mode

All that remains to be said is that you can leave this routine at any time by pressing CL (to return to the PLAY mode).

G) Mistakes and how to correct them

G1) The most common operating mistakes

You will almost definitely have a misunderstanding with your computer at some point in time. When you receive an error report in the display which you may not necessarily understand, please assume first that the errors is yours and not that of the computer. We have composed a list of the most common mistakes made whilst operating the computer:

1. Reading the display incorrectly.
Mistaking letters such as C for G and vice versa or number such as 5 for 6.
2. Making moves or trying to change the mode whilst the computer is still analysing. (Recognizable as the display is flashing).
3. Entering a position on the board without previously having cleared the board using the ENT-key.
4. During a game pieces are moved on the board but not placed on their correct squares when returned.
5. Pieces are not placed properly on their squares (sometimes they are placed so they cover a flashing LED).
6. Pieces are pushed across the board rather than lifted and then carefully replaced.
7. Whilst castling the Rook was moved first /computer registers Rook's move only).
8. Attempting to play a game whilst the problem solving level is switched on.

Mistakes are not always seen immediately. If at some point in time you don't understand what MEPHISTO is trying to tell you then the best thing to do is to run a position check. If you find pieces that are incorrectly located place them on their correct locations or alter the position to suit your opinion. If this doesn't help then we suggest that you run back through the moves played in the MEMORY mode and then page through them slowly again.

G2) MEPHISTO self-test routine

If your problem has still not disappeared and you genuinely believe that the computer has a technical fault you can run the following test routine. Set up the basic starting position on the computer, switch the computer on and wait until MEPHISTO shows PLAY in the display. Then key-in the following procedure:

Key	Display	Meaning
LEV	LE02	Activate LEV mode (basic setting LE02)
->0, C3	LE03	Set playing level LE03
ENT	PLAY	Confirm playing level; PLAY mode

Key	Display	Meaning
POS	POS	Set position mode
POS	TAl	Check position (beginning with Rook Al; LED on square Al flashes)
CL, CL	PLAY	Return to PLAY mode
MEM	MEMO	Switch on MEMORY mode
Move F2-F4	MEMO	
Move E7-E6	MEMO	
Move G2-G4	MEMO	
CL	PLAY	Switch on PLAY mode
ENT	d.8.H.4	The computer plays the next move (Black to move); this appears immediately as we are dealing with a mate- in-one move. The dots show that MEPHISTO wants to give you a comment
INFO, Al	Mat	Call up comment (checkmate)
CL, POS	POS	Switch to POS mode
<-9	- _ _ _	Check Black
CL	POS	Erase
->0	_ _ _ _	Check White
RES + RES together	PLAY	Return to basic starting position

If your computer should really have a technical fault our service people will gladly help you. To make things easier for them and to speed up the time needed for repair we request that you note the point at which the computer did something different according to the list above. This will help us to find out where the error in the computer is and will enable us to repair your computer in a shorter space of time.

H) Summary of instructions

<u>Function</u>	<u>Key(s)</u>	<u>Comments</u>
<u>1. PLAY mode</u>		
Computer makes the next move	ENT	When player to move
Interrupt analysis phase of the computer	ENT	When computer to move
Reject computer's move (second best move)	CL, ->0	Computer must make another move instead
New game	Both RES together	Erases all inputs previously made
New game with same playing level	MEM, ENT, CL	When player to move: clocks set to zero
<u>2. INFORMATION mode</u>		
Ask for replying move	INFO	When computer to move; move presently calculated is shown
Ask for mainline	INFO	When computer to move; further move is shown each time ->0 is pressed
Ask for move hint	INFO	When player to move; press ->0-key to follow line
Position evaluation	INFO, A1	Without prefix: MEPHISTO in advantage; minus-sign = at a disadvantage
Ask for comment	INFO, A1, ->0	When three dots shown in the display
Minimal analysis depth	INFO, C3	Display of how many possible lines MEPHISTO has analysed
Branch number	INFO, C3, ->0	Order of the calculated move in MEPHISTO's move list
Selectiv analysis depth	INFO, C3, 3x ->0	Display of how far the computer has analysed a critical line
Move counter	INFO, C3, 4x ->0	Number of moves played
Analysis time of the last (or present) computer move	INFO, B2	Regardless of who's move it is
Analysis time of your last move	INFO, B2, ->0	
Total thinking time of the computer	INFO, B2, 3x ->0	
Total thinking time of the opponent	INFO, B2, 4x ->0	
Leave INFO mode	CL	Return to the PLAY

3. POSITION mode

Position check	Keep pressing POS	From the second key MEPHISTO shows the position of a piece each time
Erase the board	POS, ENT, ENT	After 1.ENT, question "CL ?"
Enter position	Input of pieces	Computer automatically checks pieces; enter desired pieces; press ENT to jump over (ignore) pieces
Black plays instead of White	CL, POS, <-9, ENT	After completing the input
White plays instead of Black	CL, POS, ->0, ENT	After completing the input
Enter new piece	POS, colour, chessmen-key, co-ordinates, ENT	Colour: <-9=Black; ->0=White
Erase piece	POS, colour, Al co-ordinates, ENT	Al means blank square
Return to Play mode	CL	

4. MEMORY mode

Entering moves	MEM	Make moves
Playing moves backwards	MEM, <-9	Play moves backwards
Jump to the beginning	MEM, ENT	Display: "StA "
Playing moves forwards	MEM, ->0	As far as moves were taken back;
Store line	MEM, make moves on board POS, MEM, POS,	Storing in memory as long as power supply on;
Return to PLAY mode	CL	Taking back with <-9 possible

5. FUNCTION mode

Select playing level	LEV, number, ENT	Enter number (two characters)
Activate problem chess level	LEV, F6, ->0 ENT, number of moves to mate; ENT, ENT	After first ENT following appears: question: "Mt:?"
Search for alternative solutions	CL, ->0	Press after first solution found; "no " = no alternative move
Activate rotating display (AI)	2x LEV, ENT	Analysis time; 1.-3. move of mainline; position evaluation
Activate automatic game (AU)	3x LEV, ENT, CL	Computer plays against itself
Activate chess instructor (tr)	4x LEV, ENT	Computer warns of bad moves

Turn board (bd)	5x LEV, ENT	Black plays from the bottom of the board
Best move function (bE) switched off	6x LEV, ENT	Identical to activating the random move generator
Switch off opening book (tH)	7x LEV, ENT	MEPHISTO analyses and does not play from opening book
Switch off sound generator (tO)	8x LEV, ENT	Beep is switched off
Return to PLAY	CL	

I) Technical Data

In case the technical data of your MEPHISTO ROMA computer interests you then the most important data is listed below:

	<u>MEPHISTO ROMA 16 Bit</u>	<u>MEPHISTO ROMA 32 Bit</u>
Microprocessor:	68.000/16 Bit	68.020/32 Bit
Speed:	12 MHz	14 MHz
Program memory:		
Game memory:		
Program:	<p>The module can be user-exchanged or factory re-programmed. Mixture between Shannon-A and Shannon-B strategy with high level chess knowledge and pattern recognition for Pawn-structure.</p> <p>Opening book with approx. 5.000 lines and approx. 40.000 plys. Automatically recognises move transpositions and colour changes.</p> <p>Detailed endgame strategies pre-programmed.</p>	
Playing levels:	<p>10 training levels (preset average analysis time)</p> <p>10 beginner levels (makes human mistakes)</p> <p>10 handicap levels (matches opponents analysis time)</p> <p>10 blitz chess levels (with countdown mode)</p> <p>10 tournament levels (different time checks)</p> <p>12 problem levels (up to mate-in-12)</p> <p>19 Analysis levels (different analysis depth)</p> <p>1 Correspondence chess level (thinks until interrupted)</p>	
Chess clock:	<p>four-time chess clock</p> <p>freely selectable analysis time and time checks</p>	
Power:	<p>Mains (adapter HGN5004A or international equivalent)</p>	

MEPHISTO is the registered trademark of:

HEGENER + GLASER AG
MUNICH, WEST GERMANY

All copies, in part or in whole, require the permission of the manufacturer in advance.

The sale and rental of MEPHISTO sets is only allowed with the permission of the manufacturer in advance.

The manufacturer can not be held responsible for mistakes in this or other manuals and reserves the right to make alterations to suit technical improvements.

A L L R I G H T S R E S E R V E D , HG8711



Mephisto Roma – ‘highlighted out notes’

Page 20

... When set to a playing level between LE00 and LE29 the display will show the analysis time of the present move in minutes and seconds during a game.

Page 21

... show the..... remaining time in it's display

Tournament Levels (LE40-LE57)

Page 26

..... When playing on the tournament levels the display shows the total analysis time in hours and minutes.