Mephisto®

Amsterdam Modul



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A. General Information

A.1. Description of the unit

The MEPHISTO MODULAR/EXCLUSIVE/MÜNCHEN - AMSTERDAM is built - as are all the chess-computers of the MEPHISTO family - to allow the unit to be completely disassembled. The MEPHISTO MODULAR/ EXCLUSIVE/MÜNCHEN consists of easily exchangeable parts which enable the user to upgrade the unit at any time. It is therefore a simple affair to fit your MEPHISTO MODULAR, EXCLUSIVE or MÜNCHEN with an AMSTERDAM-module. This manual therefore applies to these units, which are to be upgraded with an AMSTERDAM-module. Getting back to the components of which MEPHISTO is built: the first part is the sensor-board with an LED (Light Emitting Diode) in each square. These LED's light when indicating moves. Hidden beneath the board, but nevertheless important, are the sensors. You will have noticed, whilst unpacking your MEPHISTO, that the pieces have a magnetic base. These magnets are detected by the sensors and enable MEPHISTO to register that a piece has just been moved.

Your MEPHISTO is fitted in a housing with a mains adapter socket, an on/off switch and three module bays. The MEPHISTO AMSTERDAM is designed for mains supply through the processor module only, i.e. the on/off switch does not operate.

You can see the three module bays if you pull open the drawer at the front of MEPHISTO (MODULAR does not have a drawer). One bay is occupied by the keyboard with 18 keys, using which you can give MEPHISTO high-level instructions (entering moves via the keyboard is unnecessary). The next module contains the display. Using this you can monitor the computer's analysis procedure e.g. which move is being considered, how much time has been taken for the game and how many possible moves MEPHISTO has analysed ahead.

The third module contains the chess-program with which MEPHISTO won its titles at the Microcomputer Chess World Championship. We expect that by now you will want to know how you can take your MEPHISTO apart. First of all you **must disconnect MEPHISTO.** Then pull out the drawer (disregard instructions concerning drawer if you own a MODULAR) as far as it will go. If you then bend the plastic rim (on the top right hand side of the drawer) outwards, you will be able to tip the drawer framework upwards. After this the modules can be pulled from their bays, or pushed into place. When inserting the modules, make sure that they slot firmly into place - you should feel them lock in. Only when the modules are correctly in place will you be able to fold the drawer framework back to its original position.

As you will have noticed, there is an adapter socket on the left lower side of the program module. Use this and **not** the socket on the side of the board (note that the switch is now also without function).

Finally, you will find two "holes" in MEPHISTO's casing on the left-hand side. The foremost contains the on/off switch (switch forwards = on, switch to the rear = off). The second hole is for the mains adapter jackplug. These parts are not used with the AMSTERDAM modules.

Please use only the mains adapter designed for the computer. Using any other adapter could damage the costly electronic circuitry inside your MEPHISTO.

A.2. Advantages of the MODULAR CONCEPT

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 the MEPHISTO chess-computers.

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 for you. We recommend that you insert the program module on the left side to avoid the mains lead getting in the way. If you want to use any other modules in your set, use the appropriate adapter and the socket of the side of the board. 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 in to the unit by the owner.

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

B. Getting started

B.1. Preparation for a game

The components of your MEPHISTO should first be fitted together. Then connect the mains adapter plug to the mains power supply and the small round plug to MEPHISTO's socket in the processor module.

The chessmen are naturally an important part of chess. You should set them up - white pieces from A1 to H1 and A2 to H2 - before you switch MEPHISTO on. An alternative solution to this is explained in section K.4. (exchanging sides without turning the board around).

B.2. Setting up for a game

Immediately after plugging in and connecting, you will see if you have incorrectly placed a piece on a square or not. Should a piece not be in the middle of its square, its LED will blink madly and demand corrective action. After this, the word **#PLAY#** will appear in the display to tell you that MEPHISTO is now ready to play.

If you don't wish to change the playing level (see chapter D.1.) then MEPHISTO will set itself to play with an average of 10 seconds thinking time for each move. This playing level **(LE 2)**is automatically set when the unit is switched on, or when a new game is started by pressing both "RES" keys simultaneously.

B.3. Making moves

We are ready to start! Lift up the piece which you wish to move and you will see that the LED in that square will begin to blink. As soon as you place the piece on its destination square, the LED there will momentarily light - MEPHISTO has just accepted your move. At the same time, the display will change. MEPHISTO has moved from the **standby phase**, in which it waited for your move, into the **analysis phase**, in which it considers its own moves. Let's forget the display for a moment. The only important thing is, that the display is flashing at a rate of once per second. You therefore can't mistaken the anlysis phase (flashing display) for the standby phase (calm display).

The moment the computer finds a countermove, it sounds a double "beep" and two LED'S in two squares begin to flash. MEPHISTO is telling you which move it wants to make. The move is simultaneously shown in the display (eg.**#G8F6#**). Don't be surprised if at some time 3 dots appear between the individual characters. This means that MEPHISTO wants to tell you something else too - you can find out exactly what, in sections H4 and H5

Make the move that MEPHISTO is showing you in the same way as before. If you make the move correctly, the LED's in both squares will be turned off.

It is important that you lift the piece from it's location and place it on its designation square - don't slide the piece across the board.

- Otherwise the following will happen: e.g. you want to move a Rook from A1 to D1 and slide it across the board. The sensor under square A1 correctly registers that the Rook has been moved. The sensor under B1 detects the passing Rook and registers this as the destination to the computer, i.e. Rook from A1 to B1, which you didn't want. To make the affair easier, lift the pieces whilst moving them and the computer will be happy.

B.4. Illegal moves

You won't be able to cheat MEPHISTO by making an illegal move. A single beep will tell you that you have broken the international chess-rules. **#Err1#** will also appear in the display to let you know you have made a mistake and all you can do is take the move back again and continue to play with a legal move. The **#Err1#** in the display will disappear once you make a legal move.

B.5. Alternative moves

It can sometimes happen that you don't particularly like a move which MEPHISTO wants to make, or that it was played in a recent game, or it is basically just too strong. We can soon change this: don't execute the move on the board - instead key in **"CL"** and **">0"**. This blocks the move for MEPHISTO and the computer has to find the next-best alternative.

A real chess-computer expert can use this feature to list all the possible continuations (with position evaluations) for a certain position. This feature is especially interesting for analysing various positions (see "Position evaluation", H. 2.). The same key combination **"CL"** and ">0" can also be used in the openings library (see chapter K. 6.) to explore one or several alternative moves. Should MEPHISTO fail to find another stored opening move in its library, it will start to analyse the position instead.

C. Communicating with the computer

C.1. Advantages of the new dialogue system

When you play chess, you want to (and should!) concentrate on the game completely. That's why the MEPHISTO AMSTERDAM was designed to let you play undisturbed without having to operate the computer (apart from moving the pieces and setting the levels at the beginning of the game).

If however, you wish to do more with MEPHISTO e.g. monitor its analysis procedure, solve chess problems etc. you have the means to do this. To enable you to understand these features properly MEPHISTO offers a new dialogue system which divides all the functions into five logical groups. This dialogue system was first used in MEPHISTO III's program, written by E. Henne and T. Nitsche.

During the game you can see whose move it is by looking at the display; when it is MEPHISTO's turn (analysis phase) the display flashes, when it is your turn (standby phase) the display remains calm. You should try to remember this for later on.

C.2. The five operation modes

You have already used one of the five functions (modes) without having examined it properly, namely the PLAY mode, which as the name indicates, is the mode in which the game is normally conducted. The following table shows you which modes are available, what they enable you to do and how to set them.

Mode	Meaning	Key	Ref. chapter
PLAY	Making moves normal game	"CL"or switch on	B.2...B.4 and E
LEVEL	Selection and checking of skill-levels, selection of special functions	"LEV"(*)	D and K
POSITION	Entering, checking and changing of positions	"POS"(*)	F
MEMORY	Taking-back of moves, replaying games	"MEM"(*)	G
INFOR-MATION	Monitoring of analysis procedure, chess clock, obtaining information	"INFO"	H and I

The asterisk (*) means that these modes can only be set in the standby phase. The letters in the last column tell you where you can find more detailed information in the manual.

C.3. Other features

Should you at some time get the feeling that the MEPHISTO is taking too long to make a move, you can force it to play the best move found so far by pressing the "ENT" key. Similarly, should you fail to find a good move when it is your turn you can let MEPHISTO think for you by pressing the "ENT" key.

If, however, you make use of this feature, you have to continue (after playing your move) by pressing **"ENT"** again to tell the computer to continue playing for itself and not for you. If you forget to do this, then you will have changed sides and - if you want - can continue playing for the other side. If you wish to play with black at the beginning of a game then press **"ENT"** as before and MEPHISTO will play with white.

The meaning of the other keys is discussed in later sections as their operation concerns specific functions.

D. Selection of playing-levels (LEVEL mode)

D.1. Changing playing-levels

As you already know, MEPHISTO automatically sets itself to play at Level 2 when switched on. You also know that MEPHISTO then needs approximately 10 seconds analysis time to make a move. Furthermore, you read in chapter C.2. that you can change the playing level with the **"LEV"** key and as such you know almost all there is to know.

If you press the **"LEV"** key during the standby phase then **#LE 2#** will appear in the display to confirm that the computer has automatically set Level 2 (as it should when switched on). To change the level press the appropriate number key (e.g."**E5**") and you will see **#LE 5#** appear in the display. Press **"ENT"** to confirm that this is the level you wish to play at.**"ENT"** is, by the way, an abbreviation of "Enter", which in computer jargon, means nothing more than that you wish to enter or confirm an instruction. Once you have confirmed the selected playing-level the word **#PLAY#** will appear in the display and you can start the game.

D.2. The meaning of the playing levels

By now you will want to know what the numbers of the different playing levels, which you have just learned to change, actually mean. First of all, it ought to be said that computers have the same problems as humans. The more time you have to think, the more chance there is that you will find a good move. For this reason it would be unjustified to expect wonders from MEPHISTO whilst it is set to a lower and thus quicker playing level, especially when you have the unfair advantage of allowing yourself more thinking-time than you allow MEPHISTO.

What exactly you can expect as far as playing skill and average response time are concerned, is shown in the following table.

Level	Meaning	Display	Average time to move
Level 0	Beginners level	#LE 0#	approx. 3 seconds
Level 1	Blitzgames	#LE 1#	approx. 5 seconds
Level 2	Standard level	#LE 2#	approx. 10 seconds
Level 3	Fast game 1	#LE 3#	approx. 30 seconds
Level 4	Fast game 2	#LE 4#	approx. 1 minute
Level 5	Fast game 3	#LE 5#	approx. 2 minutes
Level 6	Tournament level	#LE 6#	40 moves in 2 hours
Level 7	Preset total time	#LE 7#	according to setting
Level 8	Av. time per move	#LE 8#	according to setting
Level 9	Correspondence chess	#LE 9#	infinite

A general note: the stated times per move are only average times and can occasionally be much longer.

Don't think that your computer is idling the time away whilst you are looking for a good move. MEPHISTO doesn't take a break but analyses further in this time. This operation system is called "permanent brain" by the experts.

Let's get back to playing levels 7...9. As you can see from the table, you can set the total time limit for a game whilst in level 7. This means that level 7 is ideal for "Blitzgames". MEPHISTO sees the time remaining in a game and uses 1/40th of the remaining time as a guideline for its next move. Setting the game time is quite simple and works in the following way:

Key	Display	Meaning
"LEV"	#LE 2#	Enter LEVEL mode
"G7"	#LE 7#	Set level 7
"ENT"	#H --#	Requests input of hours
">0"+">0"	#H 00#	Enters zero hours
"ENT"	#M --#	Requests input of minutes
">0"+"E5"	#M 05#	Enters five minutes
"ENT"	#S --#	Requests input of seconds
">0"+">0"	#S 00#	Enters zero seconds
"ENT"	#PLAY#	Ready to start

You must be careful here to take account of the time needed to move the pieces. For example, if (as in the example above) you want to play a game in 5 minutes against MEPHISTO, you should enter an extra minute (i.e. 6 minutes) even if the pieces are to be moved quickly because otherwise the last moves will be played in zero seconds, which naturally would be impossible.

In comparison to all the other levels, level 7 has a so-called countdown mode i.e. the thinking time is counted down to zero. In addition the normal four-time chess-clock remains active and can be controlled with **"INFO"** and **"B2"** as described in section I. Should you exceed the permitted thinking time (would mean loss of the game) MEPHISTO will complain with **#TIME#**. Don't worry, you can still continue the play, after all chess is just a game.

The time setting in level 8 is achieved in the same way as in this example, except that the instruction for the **average time** given to make a move by the computer has to be entered. For example: 40 moves in 2 1/2 hours would give an average response time of 3 minutes and 45 seconds per move. If you leave approximately 10 seconds to actually carry out the move, then you can play with a time-setting of 3 minutes 35 seconds.

It remains to explain the correspondence chess level, level 9. In this level MEPHISTO will not indicate a move until you press the **"ENT"** key. You can therefore occupy your electronic chess companion for days with a complicated analysis of a position.

E. Playing chess with MEPHISTO (PLAY mode)

E.1. Standby phase

During the standby phase indicated by the calm display i.e. at the beginning of a game or when it is your move, you can give MEPHISTO a variety of instructions. Should you be unsure during this phase, whether you have left another mode correctly or not (see respective chapter) you only need to press the "CL" key and **#PLAY#** will appear in the display, asking you to continue with the game.

E.2. Analysis phase

You can tell by the flashing display (or the "rotation display"- see section H) that MEPHISTO is in its analysis phase. During this phase you can not change the playing level, change positions or take back moves of the game. You can however enter the INFORMATION mode (section H). You can also terminate the analysis phase at any time by pressing the **"ENT"** key. In this case the best move found up until the moment **"ENT"** was pressed is shown on the board and in the display. But this is nothing new. If three dots appear between the individual characters, then MEPHISTO has a message for you (see sections H.4. and H.5.).

E.3. Making moves

Normal moves: It is important - as previously mentioned - that the pieces are lifted and then placed - and not slid across the board. As long as you have only lifted a piece up (i.e. not placed) you can replace it again without consequence. The rule "once touched, a piece must be played" can therefore be disregarded. As soon as you have placed a piece on its destination square, the move is registered and MEPHISTO starts to "think". Taking the move back again is only possible in the way described in the respective section.

Should you accidentally knock a piece over, the LED in the square from where it came will blink as long as you are in the standby phase. Merely place the piece back on its square and peace will be restored. During the analysis phase MEPHISTO will first play its move, and then flash the locating square as before. Place the piece back on its square as before. If you know where the piece belongs and put it back before MEPHISTO indicates an error then all is fine and well.

Capturing moves: When a piece is captured, remove it first and then place the capturing piece on the correct square. This applies to both your moves and those of the computer.

En-passant moves: The same applies to these as with capturing moves.

Castling: When castling it is vital - as in the official rules of chess - that you first move your King and then your Rook. Otherwise MEPHISTO will assume you are merely moving your Rook. When MEPHISTO is castling the location LED's for the Rook will flash after you have moved the King.

Pawn promotion: If one of your Pawns reaches the opposite side of the board then you are entitled - as is commonly known - to exchange it for a piece of your own choice (except a King). MEPHISTO informs you of a possible promotion by displaying **#Pr--#**. All you have to do is press the appropriate key (e.g. **"C3"** = Knight, **"D4"** = Bishop, **"E5"** = Rook, **"F6"** = Queen) which causes the lines in the display to be replaced by the selected piece's symbol. Press **"ENT"** to confirm your choice. From then on MEPHISTO "knows" that the Pawn is no longer a Pawn but e.g. a Queen. If one of MEPHISTO's Pawns reaches the opposite side, the piece desired will be indicated in the display, e.g. **#Pr d#** means that MEPHISTO wants to exchange the Pawn for a Queen. Replace the piece and carry on playing.

Taking moves back: You can take back any number of moves in the standby phase by simply playing them in reverse. Of course, captured pieces must be restored to the board. You should only use this method to take moves back if you have the moves firmly in mind or have written them down. Another possible way is explained in section G.1.

F. Entering and changing positions (POSITION mode)

F.1. Verifying a position

Sometimes it is necessary to check a position on the board or you may have accidentally knocked some of the chessmen over. Thanks to your MEPHISTO this doesn't mean that you have to start all over again. You can check the position on the board at any time during the standby phase i.e. when it is your move. To do this press the **"POS"** key once to enter the POSITION mode. The computer then displays **#POS #.** Simply press the **"POS"** key again. Each time you press the key, the position of a different piece is shown along with its symbol in the display. As a test, set up the pieces as for the start of a game and check their locations. The following table tells you which symbols are used in the display to indicate which pieces.

F.1.a. Table of chessmen symbols



As you can see for yourself, the black pieces are distinguished from the white ones by a minus sign in front of the symbol. You will also see that after checking the last piece **"POS"** will appear in the display again - to tell you that the verification is complete (all pieces checked).

F.1.b. Return to PLAY mode

After completing your position verification and after the word **#POS #** has reappeared in the display, press **"CL"** to return to PLAY mode, i.e. to continue with the game. If a piece is missing from the board or is incorrectly located, you must of course correct the error. **#PLAY#** in the display tells you again that MEPHISTO is ready to play. You can end the position check procedure at any time by pressing **"CL"** twice.**#POS #** will first be displayed and then **#PLAY#.**

F.2. Entering a position

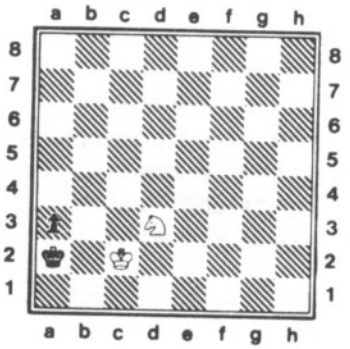
F.2.a. Clearing the board

The initial position (White A1-H1, A2-H2 and Black A7-H7, A8-H8) is automatically stored in MEPHISTO at the start of a game. In order to enter a particular position e.g. for solving chess problems, it is first necessary to clear the board. It isn't enough to just remove the pieces - as you can see from a position verification for yourself.

You have to tell the memory in your computer that nothing - but nothing - is on the sensor board. Do this by pressing **"POS"** (**#POS #** appears in the display). Then press **"ENT"** and the computer will ask you whether you really want to clear the board by displaying **#CL ?#**. Changed your mind? - press **"CL"** and everything remains as it was. But you wanted to enter a certain chess position, so press **"ENT"** again boldly and the board is cleared in MEPHISTO's memory. To confirm that "the deed is done" **# K--#** will appear in the display a symbol for the white King (which is no longer there).

F.2.b. Entering a position

The advantages of MEPHISTO's new dialogue system become particularly apparent when entering a position. You will see for yourself how easy it can be. We have selected (more or less for training purposes) a chess problem by Otto Dehler (see diagram).



Mate in 3 moves

The symbol for White's King is still in the display (from the previous section). Simply place White's King on square C.2.

The display changes to **# d--#**. As White's Queen is not needed in this problem press **"ENT"** to let MEPHISTO know this. White's Rooks and Bishops are also not needed so **"ENT"** must be pressed again twice. A white Knight is placed on D3 but the display continues to show **# S--#**. We don't need the other Knight so press **"ENT"** once more. Using the same key, tell MEPHISTO that white Pawns are also not on the board.

Next, MEPHISTO starts to ask about the black pieces (remember the extra minus sign!). As you already know how the system works, we'll keep the instructions to a minimum: place Black's King on A2, **"ENT"** (no black Queen),**"ENT"** (no black Rook), **"ENT"** (no black Bishop), **"ENT"** (no black Knight), place black Pawn on A3, **"ENT"** (no other black Pawns).

After the last **"ENT"** input, MEPHISTO reminds you to verify the entire position just to be sure, by displaying **#POS #.**

Do the computer a favour and repeatedly press the **"POS"** key to see if everything is right. One can, by the way, also watch the respective LED's on the board light up for each consecutive piece checked. When you get back to **#POS #**in the display you can go on to solving the problem by pressing **"CL"**. By displaying **#PLAY#** MEPHISTO invites you to give it the green light by pressing **"ENT"**.

There is, however, another method to enter a position. Let your computer be a computer and set up the pieces as desired on the sensor board of your MEPHISTO, The only thing that is important is that the unit is in the standby phase. When all the pieces are in the right places press "POS" and then **"ENT"**. The computer responds with **#CL ?#** to ask if you're certain that you want to clear the board.

Press **"ENT"** to confirm. In the same order as before, lift the pieces being asked for (LED flashes) and replace it on its location (LED switches off). Missing pieces are ignored with **"ENT"**. When finished it is advisable to conduct a position verification as before.

On a general note, we recommend that you use the respective special function (section K.3) when solving chess problems.

F.2.c. Choice of colour

After a position has been entered, it is normally White's turn to play. If you want to change this, whatever the reason, key in the following succession of instructions after entering the position i.e. when **#PLAY#** is back in the display:

"POS", "<9"	Position mode, Black to move
"ENT"	Confirmation of instruction
"CL"	Return to PLAY mode. Black to move

Keying-in **"POS", ">0", "ENT", "CL"** results in it being White's move. In both cases MEPHISTO will make the first move if you press **"ENT"** again.

F.3. Changing a position

F.3.a. Entering additional pieces

You will definitely wish at some time, that you had a few pieces more on the board than your electronic sparring-partner. The possibility to do this is not merely there to enable peaceful armament, but also to analyze chess problems with extra pieces wihtout causing extra difficulties.

Let's go back to the chess problem described in the previous section. If a black Bishop were at G5, the situation would be entirely different.

So let's set up the pieces where we want them. Next we have to tell MEPHISTO that something has changed. You will have suspected that this means going back into the POSITION mode:

"POS"	Change to POSITION mode
"<9"	Black piece
"D4"	Bishop
"G7","E5"	Square co-ordinates of G5
"ENT"	Confirm input
"CL"	Return to PLAY mode

If you want, you can run a position check with **"POS"** between the last two stages of the procedure. What you can not do is, bend the rules of chess when introducing pieces to the board.

MEPHISTO won't allow you to have more than one King of each colour. Also disallowed: placing Pawns on the back ranks or having more than eight Pawns of one colour. Try it anyway - MEPHISTO will protest with **#ERR3#** or **#ERR4#** in the display. The latter will also appear if you try (in the face of being defeated!) to remove your King from the board. With that we are now ready for the next section.

F.3.b. Removing pieces

Removing a piece from the board is basically the same as introducing it as an additional piece - except that we place a space on the square concerned. Sounds complicated? Wait and see, and remember Otto Dehler's chess problem from the previous sections. We added an extra Bishop, which we will now remove again, as follows:

"POS"	Change to POSITION Mode
"<9"	Black piece
"A1"	Key with no symbol = space (no piece)
"G7", "E5"	Space on G5
"ENT"	Confirm input
"CL"	Return to PLAY mode

If you don't want to believe us, run a position check. You can remove each piece with a space (key **"A1"**) in the way described.

G. MEMORY mode

G.1. Taking moves back

MEPHISTO's built-in memory enables you to recall moves or even entire games as long as you haven't started a new game, switched the unit off or used the clear-board function. The MEMORY mode is set using the **"MEM"**-key (during the standby phase) which causes the name of the mode (**"MEMO"**) to appear in the display. Using the **"<9"** key, you can recall any number of moves of a game in reverse - even going back to the beginning of a game. The cursor on the key (**"<9"**) pointing to the left indicates that you are practically scrolling back the game. The move to be played backwards is displayed in reverse notation with a dot between each character e.g. **#E.4.E.2.#**

At the same time, the location-LED's flash to tell you how to reverse the move. Should the LED's continue to blink after you have made the move, then a piece which was captured originally stood there. If, despite intensively combing your memory, you can't remember what exactly stood on the square before, you will have to move into the POSITION mode. To do this, leave the MEMORY mode with **"CL"** and check the position of the pieces on the board according to section F.1. as mentioned before.

Having completed that procedure and returned to the PLAY mode, you can use the **"MEM"** and **"<9"** keys to continue to play back towards the beginning of the game or use **"ENT"** to jump back directly to the beginning.

MEPHISTO of course knows that you can't go back further than the beginning and it reminds you with **#STA#** that you are at the start of the game.

You can, of course, interrupt the playback routine at any time with **"CL"**. You can then make the next move, or let MEPHISTO take over by pressing **"ENT"**.

In this way you can continue a game just played with a different move from a particular position e.g. if you make a fatal error and only discover the drastic consequences later on.

G.2. Replaying a game

You can, of course, also play the individual moves forwards whilst in the MEMORY mode, the key with the cursor pointing to the right (**">0"**) is there for this purpose - obviously, you can only page forwards as far as moves were previously taken back.

To remind you that you can only go this far **#END#** appears on MEPHISTO's screen. When replaying a game you can return to the PLAY mode at any time by pressing "CL" - even if you haven't reached the end of the game.

G.3. Entering a sequence of moves

You can use the MEMORY mode for other purposes at the beginning of, or during, a game. One can enter (store) an opening line by simply making the moves for White and Black on the board. Don't forget to press the **"MEM"** key first though.

to continue, press **"CL"** to return to the PLAY mode.

The MEMORY mode is also excellent for analyzing games. One can page backwards or forwards at any time, even when entering moves manually. The original position can thus be retained at any time.

G.4. Monitor mode

It is possible to set your MEPHISTO to act as an absolutely neutral referee in a game between two players, whilst recording it at the same time. To do this enter the MEMORY mode with "MEM" and play. Every move made thereafter is registered by the LED's in each square and by the display before "MEMO" reappears in the display. Illegal moves will not be permitted by your computer referee. To indicate such a move, **#ERR1#** appears in the display and the last move must be taken back and the error-report cleared from the display with **"CL"**.

Using the keys with the cursors, i.e. **"<9"** and **">0"**, you may page backwards and forwards as you like. Should your partner lose interest in the game, MEPHISTO will gladly take over his side of the board if you press **"CL"** and then **"ENT"**.

H. INFORMATION mode

Rotation display mode

In contrast to the other modes, you can enter the INFORMATION mode at any time during a game. In fact sometimes, as we will see later, you **must** press the **"INFO"** key.

The MEPHISTO MODULAR/EXCLUSIVE/MÜNCHEN AMSTERDAM does not, as opposed to the other MEPHISTO computers, show you the chess clock automatically, but instead displays the most important information in rotation as follows:

1. proceeding thinking time
2. 1 move of main-line
3. 2 move of main-line
4. 3 move of main-line
5. Position evaluation of move so far selected
6. as 1 (proceeding thinking time) etc.

These pieces of information are displayed one after another at a rate of one per second whilst MEPHISTO considers its next move. It can, by the way, also occur that the computer will only lines **#----#** during the first three cycles (stages) which means that MEPHISTO has neither found a move, nor a suitable countermove.

Give the computer a little time, it will soon find something. In the next sections we will explain what the important information displayed to you during the five cycles actually means. We will also show you how to get certain information in the display.

H.1. Main-line

If you press the "INFO" key during MEPHISTO's analysis phase, it will show you the move it would make if you stopped its analysis and forced it to play. This move is also called "the first main-line move".

Press the ">0" key after MEPHISTO has revealed its move. You will then see the move, which MEPHISTO anticipates you will make after its move. This move is logically called "the second main-line move". Press the key again to reveal the third main-line move i.e. MEPHISTO's response to your second main-line move. This can be extended further for quite a time if MEPHISTO has had enough time to calculate (i.e. is in a higher playing level). A maximum of eight plys can be shown. As already mentioned, the computer will not always immediately reveal a move if it has only just entered the analysis phase.

You can of course, also page backwards through the main-line for which the "<9" key can be used. Pressing the **"CL"** key will allow you to return to the rotation display mode at any time.

Regardless of which display mode you select, MEPHISTO remains undeterred and registers that it has found its next move with a "beep". The move is then displayed and simultaneously shown on the board. When you have reached the analysis phase again - i.e. when you have made your move - the rotation display mode is restored. It is also possible to see the main-line (the move sequence expected by MEPHISTO) in the display during the standby phase using the **"INFO"** and **">0"** keys. One can then play the move suggested or make an entirely different move and you can ignore the display in both cases.

H.2. Position evaluation

Evaluating the position on the board is well within the analysis capabilities of MEPHISTO. By pressing **"INFO"** and "A1" regardless of which phase or display cycle you are in, you can persuade MEPHISTO to evaluate the board position. A number will appear in the display, which represents the evaluation of the computer's present position, i.e. how good or bad this is. The evaluation is generally expressed in Pawn-units. A negative prefix (-) means that MEPHISTO sees itself at a disadvantage; no prefix means that the computer gives its opponent little chance of winning. If, for example, after pressing **"INFO"** and **"A1"**, the number **#-1,50#** is displayed, then MEPHITO has a disadvantage of 1,5 Pawn-units. Other display possibilities in this respect, apart from a position evaluation, which can be displayed by the computer, are discussed in section H.5.

H.3. Giving up a game

If MEPHISTO displays the number **#-9.99#** during a position evaluation then you can credit the game to your account - the computer has given up. Some chess enthusiasts regard values higher than **#-8.00#** as a defeat for the unit. After all, a computer can not defend itself if it is in this situation. Whatever, the computer's opponent ought to win from this position (provided he doesn't make a drastic mistake) as the computer's position is fairly hopeless with this value.

If the number **#9.99#** is displayed, then you might aswell acknowledge MEPHISTO's superiority and surrender. An objective inspection of the position on the board will lead to the conclusion that to carry on would be hopeless.

H.4. Advice on comments

We have already briefly mentioned in this manual that, in certain situations, MEPHISTO will insist on telling you something. MEPHISTO indicates this to you decently, by placing three dots between the individual characters in the display, (e.g. **#H.I.H.3#**). In this case you should immediately key in **"INFO"** and **"A1"**, which displays the position evaluation.

Should the evaluation be absolutely unnecessary (checkmate or draw), MEPHISTO will forgo displaying the evaluation and will directly indicate the end of the game (see section H.5.). You can call up additional comments by pressing the ">0" key after the position evaluation. The meaning of the comments which can then appear are explained in the next section. Note that it is also possible that more than one comment may appear at the same time (e.g. check and promo- tion).

After checking MEPHISTO's comments you can either continue playing or can erase MEPHISTO's message with "CL", which returns you to the PLAY mode.

H.5. Possible comments

Display	Meaning
#SCH#	Check
#MAT#	Checkmate
#PATT#	Stalemate
#RE50#	Draw because of 50-move rule
#RE3#	Draw because of threefold repetition
#M2#	Announcing checkmate e.g. Mate in 2
#Prd#	Promotion: e.g. into Queen
#EP#	Capturing en-passant
#-9.99#	MEPHISTO gives up the game
#THEO#	MEPHISTO is playing from its opening library (this comment can be called up, as explained, but is not automatically shown)

No comment will appear if, especially in a low playing-level, extremely quick moves are made. Four lines in the display indicate that MEPHISTO was in a hurry to play its move and didn't have sufficient time to make comments.

H.6. Depth of calculation, branch, move counter

It is possible, not only to monitor which move MEPHISTO is presently considering to make, but also how far it has proceeded with its analysis of a game. "Spying" in this way is possible using the **"INFO"** key. If you press **"C3"** after this, you can examine the analysis parameters of your computer, which means nothing else than that you can see how many moves ahead MEPHISTO has calculated, how many variations it has examined and how many moves have been made in the game so far.

At this point we would like to say a little about how MEPHISTO actually finds the moves it makes. In contrast to the majority of other chess-computers, MEPHISTO does not analyse all the positions possible. With the so-called "brute force method" a computer analyses everything, including abolutely nonsensical moves, which is not effective and can lead to a considerable time-loss.

MEPHISTO's A/B strategy operates in a different way. For the first few plys, every possible continuation is analysed, thereafter the computer will only analyse most promising moves deeper found. You now understand why we gove MEPHISTO its position evaluation feature. It needs this feature to be able to distinguish between the "good" and "bad" moves and thus to reach its objective quicker.

The first information displayed after **"INFO"** and **"A3"** tells you the so-called minimum analysis depth. This reveals how "deep" MEPHISTO has analysed in advance, using the brute-force method. **#M 02#** means for example that all possible positions to a depth of two plys have been analysed. Using the ">0" key, you can peer deeper into the secrets of the AMSTERDAM program. What then appears is the present branch number. This number, with the prefix "A", reveals the number of the move presently being analysed during the analysis phase from MEPHISTO's list of possible moves. During the standby phase, the branch number of the last move analysed is displayed.

This sounds complicated so allow us to explain it in a different way. MEPHISTO sorts the moves available using its intelligent position evaluation system. After this, it sets up a list of moves. Note that the move with the branch number 01 must not necessarily be the one played. Time and time again, your chess-computer will select a move from further down in the list. You can easily observe this by switching over - as just explained - during the change of the first main-line move to the display of a branch number. The higher the displayed branch number, the less value MEPHISTO has given to this move - for the moment. Very high branch numbers (e.g. 38 at 43 possible moves) probably indicate a piece sacrifice. Thus MEPHISTO proves that it can change its mind should it discover better moves.

Press ">0" and MEPHISTO will show you the appropriate move (just calculated) for the branch number displayed.

Pressing the ">0" key again will reveal MEPHISTO's selective analysis depth. This shows the depth (number of plys) which MEPHISTO has reached in a game using its selective strategy. For example, if MEPHISTO displays **#S 19#**, then MEPHISTO has selectively analysed 19 plys deep. MEPHISTO analyses much deeper than its human counterparts. If you still haven't had enough information you can press ">0" again to find out how many moves have been made in the present game. This is especially marked with the prefix **#nr #** next to the number to avoid any misunderstandings.

The same applies to the functions described here as for all the functions in the INFORMATION mode: the display flashes during the analysis phase and remains calm during the standby phase. You can play your move or return to the PLAY mode with "CL" at any time.

I. Four-time chess clock.

I.1. Thinking-time of the present move.

You can use your MEPHISTO as a chess-clock at any time during the game. Using the key combination **"INFO"**, **"B2"** you can instruct the computer to show the time it needed for its last move (or is still using). Continue with ">0" to display the proceeding time for your move (or the time needed for your last move).

I.2. Total thinking-time

Pressing the **">0"** key again brings the letters **#SUM#** to the display, instructing the unit to show the total thinking-time. The total time for MEPHISTO is the first displayed (1 x **">0"**) and then (also in hours and minutes) your own total time (2 x **">0"**). You can page backwards through all the four time displays with the **"<9"**key. The same applies again here - during the analysis phase the time displayed flashes; during the standby phase the display is calm. You can leave the chess-clock mode either with **"CL"** (return to PLAY mode)or by playing a move (or MEPHISTO plays a move) which automatically causes the clock to disappear and switches the unit back to the PLAY mode.

K. Special functions

Your MEPHISTO has a number of additional special functions, attainable in the LEVEL mode, as already mentioned before. It is important that MEPHISTO is in the standby phase to enable access. It is not vital that the special functions are set at the beginning of a game, it is also possible to set them during a game or after entering a position.
Some special functions are automatically set on and some "off" when the unit is switched on. Thereafter you have the possibility to change the setting, as you will see.

K.1. Automatic play

You can let MEPHISTO play against itself automatically without having to actually make the moves for the computer. You can even leave the chessmen away from the board. Your MEPHISTO will then play a game against itself without you having to lift a finger.

This automatic function is useful for the analysis of complicated positions e.g. adjourned positions) - you must however remember that longer analysis times will be needed.

Having now whetted your appetite to use the special functions for your own purposes, we don't wish to withhold explaining how to set them any longer.

To start you ought to be in the standby phase of the PLAY mode and in the desired playing level (section D.1.). What follows then is the dialogue printed below between you and your computer.

Key	Meaning	Display
"LEV"	LEVEL mode	e.g. #LE2 #
"LEV"	Automatic game (off)	#AU #
"ENT"	Switch on automatic game	#AU #
"CL"	Start automatic game	Rotation display mode

The INFORMATION and MEMORY modes remain available to you even during an automatic game. You can thus check, at any time, what your computer is analysing, how long it has taken so far or you can replay its moves.

You can leave the automatic mode with "ENT" at any time during the analysis phase i.e. before a move is made, MEPHISTO will then play the best move found until then and will leave the other side for you to play; the colour of the side depends on the point in time at which you interrupted. You can then carry on playing normally and with all the other features (playing level selection, taking-back of moves etc.) at your disposal.

K.2. Chess-instructor

This feature, unusual for chess-computers but very useful, was primarily conceived for learners. MEPHISTO is programmed, not to exploit crass mistakes in order to mercilessly crush its opponent, but first to generously indicate the mistake to the beginner. As a rule, it is advisable to allow the computer enough time in this mode both to make its own moves and to keep an eye on yours. You should at least be at playing level 2 in order to use this feature optimally, You can activate the chess-instructor feature as follows:

Key	Meaning	Display
"LEV"	Level mode	e.g.#LE 2#
"LEV"	Automatic function (off)	#AU #
"LEV"	Chess-instructor (off)	#LE #
"ENT"	Activate chess-instructor	#LE #
"CL"	PLAY mode	#PLAY#

Note: combining the chess-instructor function with the automatic mode is not possible. This would be nonsense anyway - why should MEPHISTO warn itself against making weak moves?

K.2.a. Weak move warning

If during a game with the chess-instructor mode on, MEPHISTO considers your last move to be somewhat thoughtless then it will do the following after a short pause: 1) four beeps will be sounded, 2) four question-marks will appear in the display (**#????#**) to warn you of your weak move.

MEPHISTO then terminates its analysis proceedure and gives you an opportunity to re-examine your move, waiting helpfully and patiently.

In the following question-and-answer routine, MEPHISTO will try to explain to you, why it wasn't so impressed with your last move:

Key	Meaning	Display
"INFO"	Shows the move, which would punish you for your weak move.	Countermove
">0"	If in memory, an entire line of moves can be displayed, which would follow your weak move	Move-sequence in main-line
"A1"	Prints the resulting "damage" in the form of a position - evaluation (see section H.2.).	e.g.**#3.34#**
"G7"	If MEPHISTO has had enough time to find it, the computer will show you a better move.	Move suggestion
">0"	By scrolling forwards, you can see how the game could have continued after the suggested move	Move sequence in main-line
"CL"	Cancels your weak move and shows (blinking LED's) how to take it back. You can then (hopefully) play a better move.	**#----#**

"ENT"	If you wish to insist on making the move objected to by MEPHISTO play mode press **"ENT"** instead of **"CL"**. The computer carries on considering its own move. The clock continues from the point where MEPHISTO interrupted its calculations.	Rotation display mode

K.2.b. Limits of the chess-instructor

As a rule, the chess-instructor can only warn the user against drastic errors (e.g. capture of a piece, threatening checkmate) i.e. when the position evaluation drops by approx. 1.00 or more. MEPHISTO must also have completed an analysis phase. If the computer is only allowed a short analysis time, it is possible that a better move suggestion may not be made. Despite all, the learner will soon come to appreciate the use of the chess-instructor, even though can not analyse all the strategic details possible.

K.2.c. Switching the chess-instructor off

Should you have had enough of MEPHISTO's directions during a game, you can turn the instructor off again during the standby phase. The key sequence is as follows;

Key	Meaning	Display
"LEV"	LEVEL mode	e.g. **#LE 2#**
"LEV"	Automatic mode (off)	**#AU--#**
"LEV"	Chess-instructor (on)	**#LE #**
"ENT"	Deactivate chess-instructor	**#LE--#**
"CL"	PLAY mode on	**#PLAY#**

You can then continue to play without MEPHISTO's advice. You will have noticed by now, that using the "LEV" key, you can page through to the desired special function and switch this on (or off) with "ENT". If two lines appear behind the special function symbol in the display, then the function is switched off. If the lines are not there, the function is "on".

Use **"CL"** to return from the special function dialogue to the PLAY mode. Try to remember the procedure for the following sections.

K.3. Checkmate solutions (problem-solving).

This special function is designed to solve checkmate problems. MEPHISTO searches for the shortest possible solution to the problem. Normally, mate-in-1 to mate-in-6 solutions will be found without much difficulty. Longer solutions (7 to 12 moves) may also be found but are often impractical due to a shortage of memory space, or your patience (when MEPHISTO takes days to analyse the position).

As a basic rule, you should enter the position on the board (see section F.2.) **before** setting the problem-level. Then continue as follows: press the **"LEV"** key a number of times until the display shows (with **#Pr--#**) that the special function "problem-level" is available. Then confirm that this is the function you want to activate with **"ENT"** (**#nr ?#**) is displayed). Next you have to tell the computer the number of moves in which the checkmate is to be found. This is done by setting the respective playing level i.e. level 1 to 12 for mate-in-1 to 12 moves, e.g. **"LEV", "D4", "ENT"** for checkmate in four moves.

You can deactivate the Problem level by setting a normal Playing level. During the use of the Problem level you can not use the INFORMATION mode to investigate analysis procedure or to obtain a position evaluation.

The AMSTERDAM program offers you a new possibly, namely to find **alternative solutions**. A proper chess problem is normally only allowed to have one solution, otherwise it is considered to be unsound. This feature is thus a very interesting one for chess enthusiasts, who wish to search for a possible second solution.

Why not try it out? - let MEPHISTO solve the mate-in-3 problem in section F.2.b. After a short time the reply 1.Sd3-b4+ with the checkmate announcement **#M3#** is displayed. Next press **"CL"** and then **">0"**. The unit beeps and **#no #** appears. This means that there is no second solution. Otherwise the computer would show this and you could repeat the procedure in the search for other key moves (solutions).

K.4. Turning the board

Occasionally, you will want to play with Black against MEPHISTO but wish to have the black pieces, the display and the keyboard in front of you too. Using this special function you can turn the "internal" chess board around by 180 degrees and play with Black "from the bottom to the top". The markings on the board are, of course, no longer valid i.e. H8 is now at the bottom left of the board (which MEPHISTO automatically accounts for in its display).

Turn the board around as follows: press **"LEV"** until the display shows **#bd--#**, meaning "board function available (off)". Switch the function on with **"ENT"** and return to the PLAY mode with **"CL"**. You should naturally change the pieces on the board first You may combine this function with other special functions.

K.5. Randomizer (best move)

Normally MEPHISTO will play its best move, i.e. with a certain degree of certainty, given the same reflexion time, it will alway play the same move from a certain position. A randomizer is available for those, for whom this is too monotonous. MEPHISTO will then randomly select another move from its list of moves with the same or similar evaluation. Of course this means the computer will not always play quite as well. The randomizer is activated using the special function dialogue again: press **"LEV"** until the "best move function" is available (automatically "on" - i.e. randomizer off) is displayed (**#BE #**). The randomizer is then activitated with **"ENT"**. Don't be put off by this unusual method of switching the function on. "Best move function activated" is naturally the same as "randomizer de-activated" and vice versa. Combining this special function with others is possible.

K.6. Openings library (theory openings)

MEPHISTO has a large openings library with approximately 3,000 variations or approx. 24,000 positions in the AMSTERDAM module. This is where the computer gets its chess knowledge from at the beginning of a game i.e. it doesn't "invent" its own moves but instead checks a type of catalogue to see if there are standard moves in chess theory. You can switch this openings library off and watch how MEPHISTO plays its first moves without its stored knowledge if you want. You know how to do this by now: The de-activated openings library is called up and shown in the display with **#TH--#**. If the lines are not there, the library is activated. Combining this function with others is possible. Please note that switching the library off is only purposeful at the beginning of a game.

In addition to this, the MEPHISTO AMSTERDAM Module offers the interesting possibility to pre-select certain opening-lines, or even to store your own variations in the memory. The latter will remain stored as long as the unit is switched on. Follow the following guidelines to store (or pre-select) opening variations:

Key	Meaning	Display
"MEM"	Activate MEMORY mode	**#MEMO#**
	Make move for White on the board	**#MEMO#**
	Make move for Black on the board	**#MEMO#**
	etc. until the end of the variation	**#MEMO#**
"POS","MEM"and **"POS"**	Store variation	**#STA#**

You can enter further opening-lines of your own choice in the same way. Approximately 200 moves can be stored. Undesired moves can be taken back with "<9". It is possible to enter moves via the keyboard instead of the board.

To return to the PLAY mode simply press the "CL"key. MEPHISTO will then display **#PLAY#** indicating that it is ready to play and waiting for your instructions. MEPHISTO will now play the moves you programmed it with and not those from its openings library. But transpositions into its own openings library are of course possible at any time.

K.7. Sound generator

In certain situations (e.g. when a move has been found, when input errors are made or when using the chess-instructor function) your MEPHISTO will attract your attention by beeping. It is possible to switch the sound generator off if you wish to play in silence. Page through the special functions with **"LEV"** until **#TO #** (tone on) is displayed and then de-activate the function with **"ENT"**. Combining this function with others is naturally possible. "CL" brings you back to PLAY mode, as usual.

K.8. Review of special functions

We wish to explain - one final time - the way in which you can (de)activate the special functions. Remember, it is important that MEPHISTO is in the standby phase. Don't forget that we, the manufacturers, have programmed the computer to set these (and other) functions according to a certain pattern when switched on. The following table shows these settings. Once the respective special function has been selected (is available) it is switched on (or off) with **"ENT"** depending on its previous state.

Just remember that thereafter you can return to the PLAY mode by pressing the "CL"key and you have understood the concept behind the special function dialogue.

Note: once you have worked your way through the entire dialogue with all the special functions you can return to the PLAY mode again with **"LEV"**.

Key	Meaning	Display
"LEV"	Activate LEVEL mode	e.g.**#LE 2#**
"LEV"	Special function: automatic play (set 'off')	**#AU--#**
"LEV"	Special function: chess-instructor (set 'off')	**#LE--#**
"LEV"	Special function: problem level (set 'off')	**#Pr--#**
"LEV"	Special function: turn the board (set 'off')	**#bd--#**
"LEV"	Special function: best move (set 'on')	**#bE #**
"LEV"	Special function: theory openings (set 'on')	**#TH #**
"LEV"	Special function: sound generator (tone set 'on')	**#TO #**
"LEV"	Return to PLAY mode	**#PLAY#**

L. Operation errors and corrective action

L.1. Input errors

There is a reasonable chance that at some time you will not exactly agree with your MEPHISTO. e.g. it may display **#ERR1#** when it is your turn to move or may suddenly make a move with a piece you have long since removed from the board. In the vast majority of cases, the error will not be due to a technical fault in the computer.

Try to be tolerant and remain calm in such a situation, making an occasional mistake is only human, so assume first that you have made a mistake whilst operating the unit. We have listed some of the most common mistakes made, based on our experience from various telephone calls and letters in the past:

Common mistakes:

1. Reading the display incorrectly (mistaking C for G and 5 for 6 etc).

2. Making a move during the computer's analysis phase (display still flashing).

3. Entering a set-up position without having first cleared the board.

4. Analysing positions on the board during the analysis phase. Pieces then not returned to original locations.

5. A piece is not properly located on its square: A flashing LED to warn you of this is sometimes covered up by the piece. Look down vertically onto the board.

6. Despite all the warnings, a piece has been slid across the sensor board and not lifted from its location and placed on its destination square.

7. When castling, the Rook was moved first instead of the King, which stored a movement of the Rook only in the computer.

8. Trying to play a game with a problem level instead of a playing level being selected.

Some errors are not immediately apparent and it can take a while before MEPHISTO complains. The best thing to do in this case is run a position verification (see section F.1.). If this doesn't help, then play the game in reverse using the MEMORY mode (section G.1.) - this mostly helps to find the error. From then on, you can continue to play as you originally intended. If you have used our advice to no avail and are still convinced that the mistake isn't yours then our service outlets will naturally help you out and save the day. If you can send a written copy of the game in which the error occured, you will help us locate the error more quickly, and that means that you will get your MEPHISTO back quicker too.

L.2. Correcting errors

Mistakes don't necessarily have to be serious ones. Sometimes you may have just pressed the wrong key and want to correct this.

As long as you were only changing instructions (e.g. playing level change) and have not confirmed these with **"ENT"** you can clear the undesired input with **"CL"** and then press the correct key.

The instruction is not confirmed until you press **"ENT"**. If you have made a move, which you didn't really want to make and MEPHISTO has then already entered its analysis phase, press **"ENT"** to force MEPHISTO to play, make the move first and then take the computer's move back again. You can also take your mistaken move back and after that a friendly **#PLAY#** in the display invites you to continue with the desired move.

M. MEPHISTO self-testing routine

Your MEPHISTO AMSTERDAM module has been carefully tested by the manufacturer. Should your set still seem to contain a fault despite our tests you can use the following test routine to see whether your MEPHISTO has a serious error.

Key	Meaning	Display
"LEV"	Activate LEVEL mode	**#LE 2#**
"C3", "ENT"	Enter playing level 3	**#PLAY#**
"POS"	Activate POSITION mode	**#POS#**
"POS"	Check position (Rook A1) LED in square A1 flashes	**#T A1#**
2 x**"CL"**	Return to PLAY mode	**#PLAY#**
"MEM"	Activate MEMORY mode	**#MEMO#**
---	Move Pawn F2 - F4	**#MEMO#**
---	Move Pawn E7 - E6	**#MEMO#**
---	Move Pawn G2 - G4	**#MEMO#**
"CL"	Return to PLAY mode	**#PLAY#**
"ENT"	Computer analyses Queen to H4 for black, dots indicate comment	**#d.8.H.4.#**
"INFO", "A1"	Call comment (checkmate)	**#MAT#**
"CL"	Return to PLAY Mode	**#PLAY#**
"POS"	Activate POSITION mode	**#POS #**
"<9"	Check black	**#-_ _ _#**
"CL"	Clear	**#POS #**
">0"	Check white	**# _ _ _ _#**
"RES" "RES"	Both keys simultaneously	**#PLAY#**

Should your MEPHISTO do anything else other than indicated in the table above please add a note to this effect in your letter.

N. Technical data and accessories

We have listed the most important data for those readers who are also interested to know what is hidden in their MEPHISTO MODULAR/ EXCLUSIVE/MÜNCHEN AMSTERDAM asides playing capability.

N.1. Technical data

Microprocessor	68000 (16 Bit; exchangeable)
Clock frequency	12 Megahertz
Read only memory	64 KByte ROM
Random access memory	16 KByte RAM
Program	Modules interchangeable. Combination of Shannon-A and Shannon-B strategy. Openings library contains about 3,000 variations or approx. 24,000 positions
Playing levels	7 playing levels 10 problem levels 1 correspondence chess level Optional time-setting
Chess-clock	Four-time-clock Move-counter
Display	4-digit LCD display (interchangeable)
Power	Mains operation

N.2. Accessories

Further accessories, e.g. new programs or program extensions are in preparation. Please ask your MEPHISTO agent for further information.

0. Summary of the most important features

Putting into operation

Plug the adapter into the mains, connect the adapter jackplug to the socket in the program module. **Don't** use the socket on the side of the board. Set up the pieces in the initial position and press both "RES" keys. **#PLAY#** appears in the display. Make sure that none of the locating LED's are flashing or are covered by a piece.

Playing level

Level 2 automatically set (approx. 10 seconds response time for MEPHISTO). To change level e.g. **"LEV", "C3", "ENT"** for level 3.

Entering a move

Lift chessman and place on desired square. MEPHISTO replies either immediately or after a short thinking-time and announces that it has found a countermove with a double beep. The computer's move is indicated on the board with the respective LED's and is also shown in the display.

Press **"ENT"** if MEPHISTO is to start with White.

Note: the display flashes during the analysis phase. Five different pieces of information concerning the computer's move analysis are shown in rotation in the display.

Illegal moves

MEPHISTO will not accept illegal moves, rejecting them with **#ERR1#.** Take the move back and press **"CL".** Continue with a legal move

Castling

Always enter the King's move first and then the Rook's move. MEPHISTO indicates its castling moves in the same way.

Unintended instructions

Clear these with "CL" before pressing **"ENT"** to confirm.

Terminating the analysis phase

You can stop MEPHISTO calculating a move and force it to play the best move found so far by pressing **"ENT".**

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MUNICH, WEST GERMANY

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