

**NOVAG®**

**obsidian**

- **INSTRUCTION**
- **ANLEITUNG**
- **MODE D'EMPLOI**

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## LCD DISPLAY OF THE NOVAG OBSIDIAN

The LCD display of the Obsidian has a six character alphanumeric display. The listed symbols below are used on the display for the Obsidian:

1. Figures

0 1 2 3 4 5 6 7 8 9

2. Letters and symbols

A B C D E F G H I K L M N  
 O P R S T U V X Y ?

THE DISPLAY



1 = Indication for the color

2 = 6 character alphanumeric display

3 = Separation for time indication

4 = Symbols for chess pieces

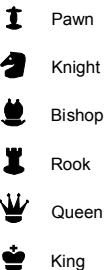
5 = Symbol for En Passant

6 = Symbol for Stalemate/Draw

7 = Symbol for Check/Checkmate

8 = Symbol for captured figures

### Symbols for the chess pieces on the display



**Note:** All LCD displays showing 3 bars " ≡ " indicate that a function is ON or the function is now at value 3.

## I. GENERAL HINTS

Playing with the NOVAG Obsidian is easy compared to other chess computers, however we recommend reading the general instructions before starting to play. The detailed instructions are laid out in such a way that each section is self-contained, so you do not have to read everything at once.

### A. BATTERIES

The OBSIDIAN runs on 6 x 1,5V UM-2 type, or size 'C' **alkaline** batteries (**not included**). A set of new alkaline batteries runs approx. 250 hours (continuous operation).

**IMPORTANT NOTICE:** Before taking out/ replacing/ inserting batteries, turn the unit off by moving the “ON/OFF” switch to the “OFF” position and unplug the adaptor. Then unscrew the battery door on the back of the unit and lift it off. To take batteries out, pull on the ribbon on which the batteries are placed. To insert batteries, place them on the ribbon according to the correct polarity as indicated by the +/- signs. After removing/inserting batteries, push the battery door back into place and screw it to the unit. Do not place any other object(s) in the battery compartment but the batteries as described above and remember, batteries must be removed when exhausted. Always use new alkaline or heavy duty batteries of the same type only – never mix old and new batteries or batteries of different type, e.g. disposable and rechargeable batteries. Do not recharge non-rechargeable batteries. Remove rechargeable batteries from the chess computer before charging and charge rechargeable batteries under adult supervision only. Any battery charger (for use with rechargeable batteries) or adaptor/ transformer should be examined regularly for potential hazards, such as damage to the cable or cord, plug, enclosure or other parts, and that, in the event of such damage, the battery charger/ adaptor/ transformer must not be used until that damaged part has been properly removed or repaired. Please also note that a battery charger/ adaptor/ transformer is **not a toy!** If you do not use your computer over a long period of time, please remove the batteries. Never short-circuit the unit, the battery charger, or any other electrical appliance or any supply terminals.

## **B. ADAPTOR**

The NOVAG adaptor (Art.No.8210) is not included with your set, but is available separately from your dealer. Please note that it is a DC 9V adaptor with 300 mA and it has a negative centre. If you cannot get the NOVAG adaptor, please make absolutely sure that you only buy an adaptor with exactly these specifications. (use of adaptors with other specifications invalidates the limited warranty). Before using the adaptor, check that the voltage of your electric mains is within the range specified on the adaptor label and that it is not damaged. The adaptor socket is located at the back of the panel of your computer.

**Note:** Make sure you first connect the adaptor with the computer before you plug it into the mains and that the unit is turned off before connecting it to the mains.

## **C. MEMORY**

The long term memory of the Obsidian will retain the last board position when you turn the computer off. However, make sure that there are batteries in the chess computer or an adaptor connected otherwise you will lose the memory contents.

## **II. SHORT INSTRUCTIONS**

1. Before commencing to play set up the chess pieces in the opening position. White pieces on rank 1 and 2, Black pieces on rank 7 and 8.
2. The power switch (marked “ON/OFF”) is located at the backside of the cabinet and operates both adaptor and batteries. Push this switch towards ON. If you use an adaptor, the batteries will automatically be disabled.
3. Press NEW GAME. You will hear 3 beeps and the LCD will show  $\overline{[0]t.--}$  with the white bar. You can now make your opening move for White.
4. If you wish to increase the level choose LEVEL GROUP I or II by pressing the SET LEVEL key (see IV.2). Then press the square corresponding to the desired level (**a1**, **a2**, **a3**, up to **h8**). On the LCD display you will see a number indicating the present level set.

5. Once you have set the level, press GO to exit the SET LEVEL mode. After this procedure you may enter your move as White. Gently press down on the piece that you want to move and the two respective rank and file LEDs will light up. Then set the piece down onto the square you wish to move to and gently press down again. (Your completed move will be shown on the LCD). Once the Obsidian has registered your move it will immediately start computing its counter move.



### III. GAME FEATURES

#### a) Making a Move

The Obsidian has a Sensor-chessboard which registers moves automatically when the appropriate squares are gently pressed. Moves to be executed for the computer are indicated by the 2x8 rank and file LEDs and on the LCD display. Each square on the chessboard is named according to the standard adopted by the World Chess Federation (F.I.D.E.) which are the coordinates of each square from **a1** to **h8**, all moves are also shown on the LCD. The color to move is indicated by the top row of the LCD (a white box indicates that it is White's move whereas a black box that it is Black's move). To make a move, gently press the piece you wish to move on the square it stands on and you will see the rank and file LEDs corresponding to this square light up. To complete your move please lift that piece and gently press it on the square you wish to move to. The completed move and color indication will be shown on the LCD. The Obsidian will then immediately start computing its counter-move. When the Obsidian is ready to move (shown on the LCD and indicated by LEDs) gently press on the square indicated, lift up this piece and complete the move as described above.

**Note:** Please remove captured pieces without applying any pressure on that square and when the Obsidian is computing (the black box will blink on the LCD) all key presses will be ignored except for the GO key which will interrupt its computing and force the current move being analyzed to be played at once.

#### b) Capturing a Piece

If the Obsidian makes a capturing move it will show on the LCD the symbol "x" and in case of En Passant pawn captures it will also show "ep". Please complete this move for the Obsidian and remove the captured piece without applying any pressure. If you wish to make a capture, make this move as for a normal one and remove the captured piece.

#### c) Impossible and Illegal Moves

The Obsidian is programmed in accordance with the International Chess Rules and does not accept nor make illegal moves.

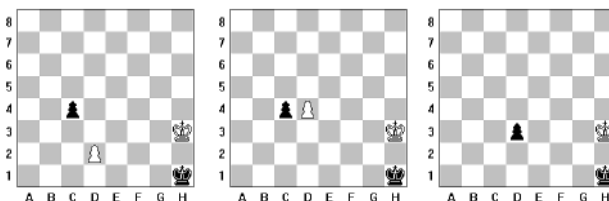
- Illegal moves are indicated by 3 beeps and the LCD display will show "**Error**". Retract your move without pressing on any square. You can now make another legal move.
- If you try to move the wrong piece when executing a computer move, you hear 3 beeps and the rank and file LEDs of the correct square will light up. To execute this move correctly, press gently on the square indicated.

#### d) **Castling**

According to the rules, a castling move is first made with the King then with the Rook. The computer will indicate all the squares that you will need to press. The computer accepts and executes castlings in set-up board positions.

#### e) **En Passant**

If you make this special pawn capture you only have to enter the "**from**" and "**to**" squares of this move as in a normal move. Please remember to remove the captured pawn from the board and to gently press that square. When the computer makes an En Passant capture it will show the words "**ep**" along with an "**x**" on the LCD.



#### **Official Rules of Chess:**

A pawn attacking a square crossed by an enemy pawn which has been advanced 2 squares in 1 move from its original square may capture this enemy pawn as though the latter had been moved only 1 square. This capture may be made only on the move immediately following such an advance and is called capturing **En Passant**.

#### f) **Pawn Promotion / Underpromotion**

If one of your pawns reaches the opposite side of the board, the chess computer will allow you to promote or underpromote it to any desired piece. Then the rank and file LEDs of the square flash and the word "**Pro ?**" will be shown on the display. You can now choose the pieces you want to promote to by pressing the respective **Piece Symbol Key**. The LEDs will disappear and the computer will start computing its counter-move. If a computer pawn reaches the opposite side of the board, the computer indicates on the LCD display into which piece the pawn will be promoted/underpromoted. The computer also accepts/executes pawn promotions in set-up board positions.

#### g) **Stalemate and Draw**

The computer announces a Stalemate by the word "**dr StL**" on display. The Obsidian recognizes the following special draw conditions as stated by the World Chess Federation:

- Draw due to insufficient material is announced by the word "**dr in5**" on display.
- 50 moves without a capture or a pawn moves is displayed with "**dr 50**".
- And 3 times repetition of position is displayed with "**dr 3rd**".

#### h) **Check and Checkmate**

Check announcements will be shown as a "+" sign on the right corner of the LCD display. If this check is the last check of the game i.e. checkmate, "**MATE**" will appear on the display along with the last move of the game and the winning color.

### i) Mate Announcement

The Obsidian will always announce mate if it sees it and will show the numbers of moves to mate on the LCD. Example: "**n 4**" means Mate-in-4.

### j) Resignation

If the computer believes its position is hopeless, it will announce "**rESiGn**" for resign. If you wish you may finish the game, however note, the computer will only once announce its resignation.

**Note:** If either side's time runs out, the LCD display will flash "**FLAG**". You may continue the game by entering the next move.

## IV. SPECIAL FUNCTIONS

### 1) NEW GAME Key

Pressing NEW GAME will reset the computer's chessboard to the starting position. This key is effective even while in the special modes like SET UP, VERIFY and SET LEVEL. Press NEW GAME every time you switch the computer on, or whenever you wish to commence a new game.

**Note:** The SET LEVEL, RANDOM and SOUND values will be retained.

### 2) SET LEVEL Key

Your NOVAG Obsidian has 112 different level settings (including Solve Mate Levels) to choose from. The levels are divided into 10 basic sections and are listed in 2 groups. On the LCD you will see the following abbreviations for these 10 level sections:

**Tr** = Tournament Level Section - **At** = Average Time Section - **Ft** = Fixed Time Section - **Sd** = Sudden Death Section **Fd** = Fixed Depth Section - **An** = Analysis Section - **EA** = Easy Level Section - **BE** = Beginner Section **IN** = Solve Mate Section - **Fn** = Fun Level Section.

### Numbering system to select the playing levels on the chessboard:

#### LEVEL GROUP I:

8	Tr8	Tr16	At8	At16	Ft8	Ft16	Sd8	Sd16
7	Tr7	Tr15	At7	At15	Ft7	Ft15	Sd7	Sd15
6	Tr6	Tr14	At6	At14	Ft6	Ft14	Sd6	Sd14
5	Tr5	Tr13	At5	At13	Ft5	Ft13	Sd5	Sd13
4	Tr4	Tr12	At4	At12	Ft4	Ft12	Sd4	Sd12
3	Tr3	Tr11	At3	At11	Ft3	Ft11	Sd3	Sd11
2	Tr2	Tr10	At2	At10	Ft2	Ft10	Sd2	Sd10
1	Tr1	Tr9	At1	At9	Ft1	Ft9	Sd1	Sd9
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>

## LEVEL GROUP II:

8	Fd8	An8	EA8	BE8	IN8	Fn8	Sd8	Sd16
7	Fd7	An7	EA7	BE7	IN7	Fn7	Sd7	Sd15
6	Fd6	An6	EA6	BE6	IN6	Fn6	Sd6	Sd14
5	Fd5	An5	EA5	BE5	IN5	Fn5	Sd5	Sd13
4	Fd4	An4	EA4	BE4	IN4	Fn4	Sd4	Sd12
3	Fd3	An3	EA3	BE3	IN3	Fn3	Sd3	Sd11
2	Fd2	An2	EA2	BE2	IN2	Fn2	Sd2	Sd10
1	Fd1	An1	EA1	BE1	IN1	Fn1	Sd1	Sd9
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>

As shown on the charts of LEVEL GROUP I and II, each playing level corresponds to one of the 64 board squares. To set the computer to any of the level settings, press the SET LEVEL key to select either LEVEL GROUP I or II and then press the corresponding chess board square (A1, A2, to.....H8). On the LCD the chosen level setting will be displayed. To confirm the level setting and exit this mode press the GO key.

For example, if you wish to set level 12 (= Tr 12 of LEVEL GROUP I - Tournament Level Section), press the SET LEVEL key once or twice to select LEVEL GROUP I (the LCD will show "LEtr1"), then press square B4. Once you have set the desired level press GO to exit this mode. Now you may enter your first move.

**Note:** You may check or change the playing levels at any time during a game, but not whilst the computer is calculating. If you wish you can interrupt the computing time and call-off a computer move instantly by pressing the GO key. This will be the best possible move the computer has calculated up to that moment. If you switch the computer off, or press the NEW GAME key, the previous set playing level will be retained.

## DESCRIPTION OF THE 12 BASIC LEVEL SECTIONS:

### LEVEL GROUP I:

#### • TOURNAMENT LEVEL SECTION : Tr 1 - Tr 16

The Tournament Levels require you to make a specific number of moves within a given amount of time which simulates a tournament game. There are 40 moves pre-set which have to be played within a fixed time, e.g. 40 moves in 120 min. (Please note that level Tr 8 is the strongest of this section). If you or the computer exceeds the specified time, the game will be declared lost.

<u>Level</u>	<u>Description</u>
Tr 1	40 moves in 4 min.
2	40 moves in 5 min.
3	40 moves in 8 min.



4	40 moves in	10 min.
5	40 moves in	15 min.
6	40 moves in	20 min.
7	40 moves in	30 min.
8	40 moves in	40 min.
9	40 moves in	50 min.
10	40 moves in	60 min.
11	40 moves in	70 min.
12	40 moves in	80 min.
13	40 moves in	90 min.
14	40 moves in	100 min.
15	40 moves in	120 min.
16	40 moves in	150 min.

• **AVERAGE LEVEL SECTION: At 1 - At 16**

The computer will use half of the specified time to calculate the counter-move and use the remaining time to complete the search. The time varies in the opening game, the middle game and end game position accordingly. The computer tends to play faster in the openings and endgame positions, but in complicated middle game positions it may take longer to make its move. Depending on the position the computer may take up to four times the set time on these levels.

	<u>Level</u>	<u>Description</u>
<b>At</b>	1	5 sec. per move
	2	7 sec. per move
	3	10 sec. per move
	4	13 sec. per move
	5	20 sec. per move
	6	30 sec. per move
	7	45 sec. per move
	8	60 sec. per move
	9	75 sec. per move
	10	90 sec. per move
	11	100 sec. per move
	12	115 sec. per move
	13	135 sec. per move
	14	150 sec. per move
	15	175 sec. per move
	16	220 sec. per move

• **FIXED TIME LEVEL SECTION: Ft 1 - Ft 16**

The computer will only use the time selected to calculate each counter-move.

	<u>Level</u>	<u>Description</u>
<b>Ft</b>	1	2 sec. per move
	2	4 sec. per move
	3	6 sec. per move
	4	8 sec. per move
	5	10 sec. per move
	6	15 sec. per move
	7	20 sec. per move
	8	25 sec. per move
	9	30 sec. per move
	10	35 sec. per move

11	40	sec.	per move
12	45	sec.	per move
13	50	sec.	per move
14	55	sec.	per move
15	60	sec.	per move
16	90	sec.	per move

• **SUDDEN DEATH LEVEL SECTION: Sd 1 - Sd 16**

On the Sudden Death Levels the computer will try to finish the game within the given time you have set. The time the computer uses for each move depends on the time already used and the actual position. If you or the computer exceed the specified time the game will be declared lost. To keep track of the remaining time these levels use count-down clocks. The total time clock starts at the set level (e.g. 20:00 on level Sd 5) and counts down to 00:00. When the clock reaches 00:00 you will hear 3 beeps and the LCD will show "FLAG". The side to move loses on time. If you wish you can continue and finish the game; in this case the total time will be displayed and will be counted continuously.

<u>Level</u>	<u>Description</u>
<b>Sd</b> 1	3 min. per game
2	5 min. per game
3	10 min. per game
4	15 min. per game
5	20 min. per game
6	25 min. per game
7	30 min. per game
8	35 min. per game
9	40 min. per game
10	45 min. per game
11	50 min. per game
12	55 min. per game
13	60 min. per game
14	90 min. per game
15	100 min. per game
16	120 min. per game

**LEVEL GROUP II:**

• **FIXED DEPTH LEVEL SECTION: Fd 1 - Fd 8**

On these levels you set the computer's search depth and it can only search to the depth you have entered. Please note that the time the computer needs to reach the set search depth will vary with the board position. As a general rule the computer needs 3 to 6 times longer to reach the next depth than to reach the current depth.

<u>Level</u>	<u>Description</u>
<b>Fd</b> 1	search only 1 half move
2	search only 2 half move
3	search only 3 half move
4	search only 4 half move
5	search only 5 half move
6	search only 6 half move
7	search only 7 half move
8	search only 8 half move

- ANALYSIS LEVEL SECTION: An 1 - An 8**

These levels provide deeper searches for more complicated positions. On level "An 8" the computer searches indefinitely until a Check Mate is found or you stop the search (press "GO"). If the search is halted the computer makes the move it currently thinks is the best.

<u>Level</u>	<u>Description</u>
<b>An</b> 1	search only 9 half move
2	search only 10 half move
3	search only 11 half move
4	search only 12 half move
5	search only 13 half move
6	search only 14 half move
7	search only 15 half move
8	search INFINITELY

- NOVICE LEVEL SECTION: EA 1 - EA 8 AND BEGINNER LEVEL SECTION: BE 1 - BE 8**

These levels are designed for novice players. On these levels the computer restricts its search which produces a weaker play giving the beginners a better chance of winning.

<u>Level</u>	<u>Description</u>
<b>EA</b> 1	1 ply full search + 2 ply capture search
2	1 ply full search + 3 ply capture search
3	1 ply full search + 4 ply capture search
4	1 ply full search + 5 ply capture search
5	1 ply full search + 6 ply capture search
6	1 ply full search + 7 ply capture search
7	1 ply full search + 8 ply capture search
8	1 ply full search + 9 ply capture search

<u>Level</u>	<u>Description</u>
<b>BE</b> 1	2 ply full search + 2 ply capture search
2	2 ply full search + 3 ply capture search
3	2 ply full search + 4 ply capture search
4	2 ply full search + 5 ply capture search
5	2 ply full search + 6 ply capture search
6	2 ply full search + 7 ply capture search
7	2 ply full search + 8 ply capture search
8	2 ply full search + 9 ply capture search

- SOLVE MATE LEVELS SECTION: IN 1 - IN 8**

If you have a possible mate position and you want the computer to find it, set the computer on one of the Solve Mate Levels. The Obsidian will search for the shortest possible solution to a mate problem up to Mate-in-8. If the computer discovers a forced mate it will display a mate announcement. If there is no mate present / the computer cannot find a mate you will see "nonE" on display.

<u>Level</u>	<u>Description</u>
<b>IN</b> 1	Solve mate in 1 problem
2	Solve mate in 2 problem
3	Solve mate in 3 problem
4	Solve mate in 4 problem

- 5 Solve mate in 5 problem
- 6 Solve mate in 6 problem
- 7 Solve mate in 7 problem
- 8 Solve mate in 8 problem

**Example:** To solve a Mate-in-3 problem, setup the chess positions on your chessboard as shown on the diagram.

To set up the board position proceed as follows:

- NEW GAME key
- SET UP key → SET UP key
- CLEAR key
- COLOR key to select WHITE
- Set up all White pieces as described in section IV.14.
- COLOR key to select BLACK
- Set up all Black pieces as described in section IV.14.
- COLOR key, it is White to move
- GO key: to exit SET UP mode
- LEVEL key → Set Solve Mate Level In-3
- GO key: to exit LEVEL mode
- GO key: to start the mate search

Solution:

- |    |          |         |
|----|----------|---------|
|    | White    | Black   |
| 1. | c2-d4    | d3 x d4 |
| 2. | e5-g3+   | f7-e5   |
| 3. | f5 x e5+ | mate    |



• **FUN LEVEL SECTION: Fn 1 - Fn 8**

On these levels the computer makes some very human mistakes and plays almost instantaneously with very little strategy or tactical insight. Even rank beginners can beat the computer on these levels!

<u>Level</u>	<u>Description</u>
<b>Fn</b> 1	2 sec. per move
2	5 sec. per move
3	10 sec. per move
4	20 sec. per move
5	30 sec. per move
6	60 sec. per move
7	120 sec. per move
8	180 sec. per move

### 3) SOLVE MATE FUNCTION (use key marked SET LEVEL)

Your NOVAG chess computer can solve most chess problems as well as mate problems up to Mate-in-8 even those that require castlings, en passant captures or pawn promotion / underpromotions.

- Press NEW GAME and set up the required board position. Before you start the mate search, it is advisable to verify the set-up board position via the VERIFY key and make sure that the color to move is correct, if not, change this by pressing the CHANGE COLOR key.
- To set the depth of mate search press the SET LEVEL key until the correct indication "in 1" shows on the display. Select now the number of moves to mate by pressing any of the squares G1 to G8.
- Press the GO key once to exit the setting of the mate search and then press GO a second time and the computer begins with the mate search.

If there is no solution you will see "no nE" on display. Whilst the computer is searching it will show the main variations that it is presently considering and will rotate a variety of information on the LCD display in the following order:

- a) Time used up so far (example : " 01 : 35 ")
- b) First move of main line (example : " G5 G4 ", display of the most anticipated next move for Black).
- c) Second move of main line (example : " F3 H4 ", display of the thereafter expected counter-move for White).
- d) Third move of main line (example : " D6 D5 ", display of the anticipated counter-move for Black).
- e) Evaluation of the position = score from computer's point of view (example : " 0 21 ", means + 0.21 pawns up).
- f) Depth of search (d 6 means now searching 6 half moves).
- g) Iterations not completed (29 30 means 29 out of 30 still to be calculated).
- h) If there is no solution you will see "no nE" on display.

### 4) GO Key

The GO key is used to enter a command or to exit from the following special functions: SET UP / VERIFY / SET LEVEL / AUTOPLAY or DEMO / SOLVE MATE. These functions are explained in their respective paragraphs. Furthermore the GO key is used:

- To make the Obsidian compute for the side to move, even if in REFEREE mode.
- To interrupt the computing time and call-off a computer move instantly. The computer will make the move it currently considers the best. Please allow at least 5 seconds of search time before pressing this key in order to let the computer calculate a reasonable move. The evaluations of these moves do not correspond with the evaluation of the set-up level.
- To change sides during a game. Wait until it is your turn to move then press GO. The computer will now compute a move for your color, and you will play the other color from now on.
- To let the computer play against itself, which might be of special interest at a certain point during the game or for learning purposes. Every time you press GO the computer calculates for the side to move. All moves will be computed according to the set skill levels.
- To accept a HINT. If a hint is shown on display, pressing GO accepts the hint as though keyed in.

### 5) **RANDOM Key**

Every time you switch the computer on automatically the move with the highest rating is chosen, based on the depth of the search which is determined by the skill level. This is always the case after the opening is finished. However, this may not always provide the desired variety. If you press the RANDOM key you can choose various levels of randomness (**rAnd / r And - / rAnd = / rAnd =** ) Level "**rAn**" is the least random. The computer will select a move at random from a list of possible moves which are similar in their evaluation.

### 6) **REFEREE Key**

In this mode you disable the computing of moves by the computer so you may make moves for White and Black, while the computer still checks their legality. This feature may be used to enter particular book openings or to allow 2 players to challenge each other.

You may enter into this mode at the beginning or during a game before you make your next move. Press the REFEREE key and the LCD will show "**rEF =**" if REFEREE mode is on and just "**rEF**" when it is off. Press REFEREE while displayed to change the current status. The following features are still available whilst in this mode:

TAKE BACK / CHANGE COLOR / HINT / SET UP / VERIFY / SOUND / GO.

### 7) **HINT Key**

The Obsidian can suggest moves if you are not sure how to continue your game which is a great tutoring feature. When it is your turn press the HINT key and the computer will show the move it considers the best (the move will be shown on display). You can accept any suggested move or may make a move of your choice even whilst a HINT is being displayed. If you accept the suggested move simply press GO and the computer will immediately reply with its counter-move. If you press the HINT key whilst the computer is calculating, the display will show the move the computer would play if the GO key was pressed. Press CLEAR key to clear the LCD display and go back to the rotating info display. The suggested move is the best possible move in this position computed by the computer at the level preset by you.

## 8) TRAINING Key

This function is to help the novice player:

**Step One :** When it is your turn to move press the TRAINING key and the computer will show the "from" square (indicated by the lit up LEDs and on the LCD) of the first piece with a legal move.

If you continue to press the TRAINING key, the Obsidian will show you all pieces with at least one legal move. You may cycle through this step as often as you wish.

**Step Two :** Once you have selected a piece, press GO to have this square accepted as though keyed in. If a "from" square has been entered then each press of the TRAINING key will show now each legal "to" square by this piece.

**Step Three :** If you accept the move as displayed, press the CLEAR key to clear the display and then key in this move. The computer will then make its counter-move. If you wish to make a move other than displayed clear first the display by pressing the CLEAR key and then execute the move of your choice. Should you wish to go back to Step One, use the CLEAR key to reset the LCD display and then press the TRAINING key to go to Step One.

## 9) TAKE BACK Key

The Obsidian allows you to take back 112 halfmoves to enable you to rectify an earlier mistake or to play a different strategy. Wait until it is your turn to move. Press the TAKE BACK key and the move is shown on display and the LEDs of the "to" square are on. Execute this move as any other ordinary one, i.e. by applying pressure on both squares as indicated. Every time you press TAKE BACK the computer will reverse the last move. If a captured piece has to be replaced, the rank and file LEDs of that square light up and the piece type and square is also shown on the LCD. Place the captured piece on that square by applying gently pressure and the LEDs will disappear. To exit this mode make your next move or ask for the computer's next move by pressing the GO key.

**For your convenience and additional option the Obsidian offers a direct TAKE BACK feature:**

You do not have to press each time the TAKE BACK key before taking back your last move. Wait until it is your turn and then simply take your last move back by pressing the last "to" and "from" squares of the chess piece you wish to take back. The next move to be taken back will be indicated on the LCD display as well as by flashing LEDs. Using this method you may take back up to 112 halfmoves. You can continue the game any time by either making a move for your side or pressing the GO key to recall a computer move.

**Note:** If you select the CHANGE COLOR or SET UP function to alter the position of any of the pieces, all prior moves will be deleted and you may not TAKE BACK moves before the change of color or position. If no moves are in the game history the LCD will show "bEG in".

## 10) TRACE FORWARD Key

This key is mainly used for tracing forward all moves after using the TAKE BACK or RESTORE function. Every press of this key will replay a move of the current game until all moves in memory have been replayed. This is indicated by the word "En d" on the LCD.

## 11) COLOR Key

The computer is generally set to play Black and you White. If you wish to play Black in a new game, set up the Black pieces on rank 1 and 2 and the White ones on rank 7 and 8, in that case disregard the notations along the chessboard.

**Now press:** NEW GAME key - COLOR key - GO key

The computer will make its opening move for White from the top of the board and you will have your Black pieces in front of you. The COLOR key can be pressed at any time during a game and the color to move will be reversed. Any moves made prior to pressing this key will be erased and the game history will begin with this position. If you are in the SET UP mode you can choose the color to move first via the COLOR key (see section IV.14.).

Should you wish to take over the computer's game simply press the GO key. The computer will now compute a move for your color and you will play the other color from now on.

## 12) CLEAR Key

This key has several uses:

- In SET UP mode this key clears the board of all the pieces.
- If there are messages on the LCD display like "**rAnd ≡**", "**EASY ≡**" etc. you can clear them by pressing this key.
- If you start entering a move and wish to cancel it you may press this key to clear the LCD display and start over again.

## 13) VERIFY Key

This key has a double function:

- a) On the 1<sup>st</sup> press you will enter the VERIFY mode and the LCD will show "**VEr --**".
- b) On the 2<sup>nd</sup> press you will enter the SET UP mode and the LCD will show "**SEt --**".
- c) To exit either of these modes press the GO key.

At any point in a game or after entering a board position you can check the position of any number of pieces. You can also check each square to see if it is occupied and by which piece. In this mode there are two ways to verify the position of pieces.

- Choose the piece(s) to be verified via the Piece Symbol Keys one after the other and as often as needed. The piece symbol and its square position appears on display and the rank and file LEDs of the corresponding square will light up accordingly. If there are no pieces or no more pieces (to be verified) on the board the display will just show the symbol of the piece and the right side of the LCD will be blank.
- Press any square and check the information on display. If the square is occupied, the **Piece Symbol**, the correct **Color Sign** and the corresponding **Square Position** will appear on the LCD.

If the square is not occupied, you only see the square position but not the piece symbol and its color on display. You may exit this mode any time by pressing the GO key. Enter now your next move or call off a move for the computer.

## 14) SET UP Key

This mode is designed to enable you to set up board positions to solve chess problems or to set handicaps by removing or entering a piece, as well as changing the positions of pieces. In SET UP mode the computer's legality check as to the movement of pieces is disabled and you can enter, remove or change positions of any piece. However you cannot set up an incorrect position, e.g. play without both Kings or with more than one King for each color . . . etc.



If you exit the SET UP mode with an illegal position, you will hear three beeps and the "Error" sign will be on display. Use the VERIFY mode to see what is illegal about the position. The computer will accept and execute castlings, pawn promotion and en passant captures if you play from a set up board position.

**Note:** All previous stated moves are canceled as soon as you enter the SET UP mode.

To enter this mode press the SET UP / VERIFY key twice or if you are already in the VERIFY mode once. You will see the word "SE t --" on display. To exit this mode press the GO key or change to the VERIFY mode.

**a. Removing a piece :**

If you wish to remove one or more pieces proceed as follows:

- Press the SET UP key twice, so that "SE t --" comes on display.
- Remove the piece(s) one by one by applying gentle pressure. The piece symbol and the position of each square appear on display.
- To end this mode press GO.
- If necessary change color via the CHANGE COLOR key then enter your next move or call off a computer move.

**b. Entering a piece :**

If you wish to enter one or more pieces proceed as follows:

- Press the SET UP key twice, so the "SE t --" comes on display.
- You can change the color of the piece(s) to be entered with the CHANGE COLOR key.
- Select the piece to be entered via the Piece Symbol Key and the respective piece symbol comes on display.
- Enter the piece by gently pressing it on the desired square and the respective rank and file LEDs will light up.
- Subsequent pieces of the same kind and same color can be entered without using any further function keys.
- Only change color or use the Piece Symbol Key if the piece varies from the preceding piece.
- To end this mode press GO.

**c. Moving a Piece to another Square:**

If you wish to change the position of one or more pieces whilst the game is in progress proceed as follows:

- Press the SET UP key twice, so the "SE t --" comes on display.
- Move the piece(s) by proceeding as you would in a normal move (the rank and file LEDs light up and on display you will see this move).
- To end this mode press GO.

**d. Clear the entire board:**

If you want to set up a board position it is best to clear the entire chessboard before entering the desired position. First remove all pieces from the board and set up your new position without pressing down on any square; then enter this position as follows:

- Press the SET UP key twice, so the "SE t --" comes on display.
- Now press CLEAR key to cancel all pieces from the computer's memory (on the LCD display first "cLEAR" and immediately after "SE t --" will appear).
- Now enter your position piece by piece into the computer as described above.
- To end this mode press GO.

- The color to move can be changed via the CHANGE COLOR key.

**Note:** After having left the SET UP mode if a change of color is required press the CHANGE COLOR key. You may now enter a move for the indicated color or make the computer move by pressing the GO key.

### 15) RESTORE Key

This function of the Obsidian allows you to restore the board position to the very beginning of the game. The computer can store 112 halfmoves in its memory which normally will allow you to go back to the new game position. If, however the game was started from a SET UP position or if more than 112 halfmoves have been played the game will not be at the new game position. After pressing the RESTORE key the display will show "**bEG in**" and then [ **0 l.-- --** ] to indicate the beginning of the game history.

**Note:** You may use the complementary function key TRACE FORWARD to replay through the entire game.

Should you enter a move for your color you will erase all of the game history and the computer will treat this as a new game.

### 16) SOUND KEY

The Obsidian has four different sound settings which will be indicated on the LCD display.

Setting 1 (**Sound** ) : There will be no acoustic signals at all.

Setting 2 (**Sound** - ) : There will be an acoustic signal only when the computer answers with its counter-move.

Setting 3 (**Sound** = ) : There will be an acoustic signal when pressing any key and when the computer or you make a move. This setting will be automatically on when you start a new game position.

Setting 4 (**Sound** ≡ ) : In addition to the same sound setting as mentioned under Setting 3, there are two more features available on Setting 4:

#### a) Piece warning feature:

If one of your higher value piece is threatened you will hear a double beep to warn you and you will see the square position and the piece symbol of the threatened chess piece on display. This is valuable learning feature for the novice player.

#### b) Opening book tutoring:

The Obsidian has a built-in opening book of about 8900 halfmoves.

When you play a game from a New Game position and you are making a move "off book" the computer will warn you with a double beep and the LCD display will show "**OFF BH**" indicating that your move is not played according to the opening book list. The LCD will keep your "off book" move displayed until you confirm this move by pressing the GO key or take back your "off book" move (see section IV.9.) and make another move which corresponds to the openings list. Once the book move line is completed and terminated, this will be indicate by "**EndBH**" on the LCD display.

Make use of this interesting feature to learn more about the opening book game.

### 17) AUTOPLAY Key

Your computer may be set to play against itself and you MAY want to do this to watch an interesting game or to analyse a problem position overnight. Press the SET LEVEL key and select the level of skill. Press now the AUTOPLAY key and select the required setting (display shows "**Auto=**", "**demo=**" or "**nor**"). To start any of the selected settings press the

GO key. This immediately starts the Obsidian playing against itself at the current level setting. All moves are executed automatically by the computer and are shown on the LCD display. You may keep track of the game by making the moves on the board.

Setting "**Auto**" = autoplay on : will allow the computer to play against itself until the end of the game (1 game only).

Setting "**demo**" = demo on : will allow the computer to play against itself continuously (at the end of a game the computer will restart with another game).

Setting "**nor**" : means autoplay and demo mode are off.

**Note:** To exit this mode whilst the computer is still executing opening moves, press the NEW GAME key but please bear in mind that this will cancel the current game.

Once the game is more advanced (out of the opening book) you can press the GO key to exit the AUTOPLAY mode. The move currently being calculated will be executed before the computer exits this mode. If you want to learn more about chess we suggest to call off single moves for each side via the GO key, which gives you more time to study each move.

## 18) INFO Key

This key provides information on the current game as it progresses and has a rotational display to show many messages.

- First press on the INFO key shows the time of the side to move, ( on display you will see the message "totAL" for 1 second and the color symbol of the side whose clock is being shown).
- Second press on the INFO key shows the time of the side not to move, (format as above).
- Third press on the INFO key shows the evaluation of the current position adjusted to the number of pawns advantage or minus so many pawns disadvantage.
- The LCD shows "ScorE" and then some figures like "o 41" which means almost half a pawn advantage to the side to move. Disadvantageous evaluations are marked with a " - " sign. For example if the computer sees it is going to be mated then the score could be "- n 03"
- Fourth press on the INFO key will show the number of moves made so far. (The display will show "**count**" and the color symbol and after 1 sec. the number of moves made so far).

**Note:** Use the CLEAR key to clear the INFO display. When the computer is thinking the display will show either the rotating display or one of the above INFO displays. To get back to the rotating display press the CLEAR key again.

Once the computer has finished its computing, the INFO display will disappear and the display will show the computer's next move.

### The rotating displays are:

- The time spent on the current search.
- The first 3 ply of the best line found so far.
- The score displayed as above.
- The current depth of search.
- The number of legal moves in current position still needed to search out of total number of legal moves.

**Note:** Each display stays for 2 seconds.

### **19) EASY Key**

The Obsidian always uses the opponent's time to compute its best response which is quite an advantage as it will sometimes reply instantly (even if the move appears difficult) since it has predicted your move and completed its assessment of your move. To disable this advantage please use the EASY key. When this mode is activated you will see the message "EASY ≡" on the LCD and if turned off you will see "EASY". This key acts as a toggle with alternate key presses turning it ON and OFF.

## **IV. APPENDIX**

### **A. Care of the NOVAG chess computer**

Dirt and dust can be removed with a soft cloth (**please remove all batteries or connections to the mains, adaptor or transformer prior to cleaning the unit**). Do NOT use any chemical solvents or other fluids/ water on the chess computer or expose it to rain or moisture (it is not water resistant!). Any damage caused by their use/ exposure invalidates the warranty. Always keep the chess computer in a dry and cool place (normal room temperature). Avoid exposing the computer to heat, e.g. spot lights, radiators, sunshine, etc. as this may lead to permanent damage caused by overheating which is not covered by the warranty. Be careful not to scratch the LCD and be reminded that the LCD screen is made of glass. Breakage of the LCD screen is not covered by the limited warranty.

#### **ADDITIONAL INFORMATION REGARDING WARRANTY:**

**For details regarding the warranty of this product and how to obtain warranty service please refer to the enclosed Warranty Card.** In addition, Perfect Technology Ltd. or the Sellers of Novag branded products shall not be liable under the product's warranty if its testing and examination disclose that the alleged defect in the product does not exist or was caused by Customer's or any third person's misuse, neglect, improper installation or testing, unauthorised attempts to repair or modify, or any other cause beyond the range of the intended use, or by accident, fire, lightning, or other hazards or acts of God. The product's warranty does not cover physical damage to the surface of the product, including cracks or scratches on the LCD screen. The product's warranty does not apply when the malfunction results from the use of this product in conjunction with accessories, other products, or ancillary or peripheral equipment and Perfect Technology Ltd. or the Sellers of Novag branded products determine that there is no fault with the product itself. To the full extent allowed by law Perfect Technology Ltd. also excludes for itself and its suppliers any liability, whether based in contract or tort (including negligence), for incidental, consequential, indirect, special, or punitive damages of any kind, or for loss of revenue or profits, loss of business, loss of information or data, or other financial loss arising out of or in connection with the sale, installation, maintenance, use, performance, failure, or interruption of this product, even if Perfect Technology Ltd. or the Sellers of Novag branded products have been advised of the possibility of such damages, and limits its liability to replacement or repair of the product. This disclaimer of liability for damages will not be affected if any remedy provided herein shall fail of its essential purpose. GOVERNING LAW: The product's limited warranty shall be governed by the laws of the Hong Kong Special Administrative Region unless otherwise specified.

### **B. Trouble shooting list**

All NOVAG chess computers are extensively tested before leaving the factory to ensure trouble free operation. However if you encounter problems when using the NOVAG Obsidian please refer to the list below before sending the unit back to your dealer.

1. The computer does not work and the LCD is blank. Please check if your batteries have sufficient charge, always use heavy duty or alkaline batteries for reliable performance.
2. The letters on the LCD display are faint/ get dimmer as you use your chess computer. The batteries are run down, please change them (see section I.A.).

3. The chess computer keeps returning error messages ("**Error**") on entering moves. Please check that your position is correct using the VERIFY function (see section IV. 13). Or if the computer is requesting you to enter a pawn promotion please press one of the Piece Symbol keys (see section III.f.).
4. The Obsidian will not respond/ all LEDs light up and the computer is completely blocked. Please reset the computer by following these instructions:
  - Switch off the chess computer, turn it on its back and locate a small hole marked "RESET".
  - Use a thin instrument (ball pen) to poke into this hole and hold it for 5-10 seconds.
  - The memory has been reset and you may continue using your Obsidian normally.
5. The blinking of the LEDs slows down: The power of the batteries is insufficient, please change the batteries (see section I.A.).
6. One of the LEDs does not light up: Go into the VERIFY mode and check all the rank and file LEDs by pressing on every square. If that particular LED still does not light up, you have to send your computer in for service.
7. One of the squares does not register a move: Go into VERIFY mode and check the square. Depending whether it is occupied or not, you should get a positive response. If you get any type of response the square is in working order, you may have entered something irregular. If, after several attempts, there is no response on that particular square, you will have to send the computer in for service.
8. Under the environment with electrostatic discharge, the chess computer may malfunction and require user to reset the chess computer

### C. Technical Data and Features

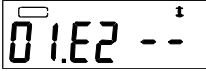
• Programme Size	32K Byte ROM (Read-Only-Memory) 1K Byte RAM (Random-Access- Memory)
• System Clock Speed	2 x 16 MHz
• RISC Style Processor	H8/3214
• Power Supply	50 mA max.
• Power Consumption	350 mW max.
• Batteries	6x 1.5V UM-2 or size "C" alkaline batteries
• Battery Playing Life	250 hours
• Adaptor	9V DC rating 100mA (Art. No. 8210)
• Opening Book	more than 8,900 halfmoves
• Playing levels	112
• Game Memory, Hint, Training function	
• Takes Back Moves	112 halfmoves
• Estimated ELO (USA)	2,320
• Solves Mate	up to Mate-in-8
• Mate Announcement	up to Mate-in-8
• Depth Search	18 halfmoves
• Elegant Slim Board	370 x 266 x 35 mm

#### D. EXAMPLES OF THE DISPLAY:

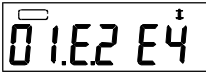
The following are examples of the most important displays of the NOVAG Obsidian.



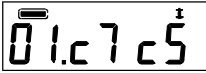
This display indicates that the computer is ready and its your move.



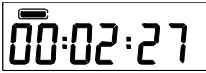
Display after input of the first half move, the location where you wish to move FROM.



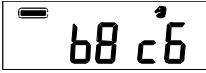
Display after input of the destination square that you wish to play TO.



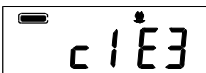
Display of the computer's counter-move.



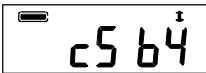
INFO-Display: Shows the total time used so far for Black, while the computer is computing.



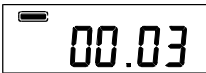
INFO-Display: The computer's counter move.



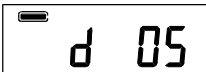
INFO-Display: The Obsidian expects this move after the previous b8 c6.



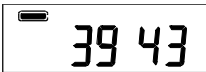
INFO-Display: On c1 e3 this would be the computer's reply.



INFO-Display: Score for Black currently being computed.



INFO-Display: Number of half moves the computer has searched so far.



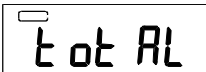
INFO-Display: Out of 43 variations there are still 39 to compute.



INFO-Display: The display for the scoring is selected and will appear after 1 second.



INFO-Display: Position evaluation for White, and it is White to move.



INFO-Display: Shows that the total time for White is selected and will appear after 1 second.



INFO-Display: Shows the total time used by White so far.

tot AL

INFO-Display: Shows that the total time for Black is selected and will appear after 1 second.

00:09:14

INFO-Display: Shows the total time used so far for Black so far.

count

INFO-Display: The display for the number of moves is selected and will appear after 1 second.

12

INFO-Display: Shows the total number of moves made so far.

02.c5xd4

The piece on square d4 gets captured during Black's moves c5 x d4.

Error

Any illegal move or input will be indicated by the ERROR message.

resign

The Obsidian resigns the game.

draw stl

Shows the announcement for a draw, due to stalemate.

draw 3rd

Shows a draw with 3 time repetition of the position.

draw 50

Shows a draw according to the 50 move rule.

draw ins

Draw due to insufficient mating material (see F.I.D.E. rules).

mate

The announcement of a checkmate.

verify --

The VERIFY-Function is selected and you may verify the position of any piece on the board.

set up --

The SET UP-Function is selected and you may remove or add any chess piece to make up a new position.

clear

The use of the CLEAR BOARD key is confirmed.

set up a8

A Black Rook is set up on square a8 by using the SET UP-Function.

LE.in 4

A mate-in-4 is entered by using the SOLVE MATE-Function.

Auto ≡

The AUTOPLAY-Function is on and Obsidian will start playing itself after pressing GO.

rEF ≡

The REFEREE-Function is activated by pressing the REFREE key.

Sound

The SOUND is switched off.

rAnd ≡

The RANDOM-Function is activated.

EASY ≡

The EASY-Mode is activated.

Pro ?

The computer asks into which piece your pawn will be promoted/underpromoted.

12. ' A1

The Obsidian wishes to promote its pawn which has just moved onto the square a1 and request a Rook in its place.

bEG in

Shows that the game is set back to the beginning of the game by activating the RESTORE key.

End

The last move of the game has been made, there are no other moves stored in the memory.

LE

The SET LEVEL key has just been pressed. You will see the selected level after 1 second.

LE.tr 10

Tournament level 10 has been selected and is now effective.

LE.At 11

Average Time playing level 11 has been selected and is now effective.

LE.Ft 12

Fixed Time level 12 has been selected and is now effective.

LE.Sd 13

Sudden Death playing level 13 has been selected and is now effective. Clocks will count down to zero time.

LE.Fd 2

Fixed Depth playing level 2 is selected and now effective The computer will only analyze every move for only 2 half moves.



LEARN 3

Analysis level 3 is selected and is now effective.

LEEA 5

Easy level 5 is selected and is now effective.

LEBE 4

Novice playing level 4 is selected and the Obsidian will play less strongly.

LEFN 5

Fun level 5 is selected and is now effective.

25.h4xG3+

Black's Pawn move was from h4 and captures on the square g3 and announces check.

nATE 1

The computer announces a mate-in-1, the game is lost for you.

FLAG

Time out.

## **VI. RULES OF CHESS**

### **I. GENERAL MOVES**

1. The two players must alternate in making one move at a time. The player with the white pieces moves first to start the game.
2. With the exception of castling (section II.1.), a move is the transfer of a piece from one square to another square which is either vacant or occupied by an enemy piece.
3. No piece, except the Rook when castling and the Knight (section II.5) may cross a square occupied by another piece.
4. A piece moved to a square occupied by an enemy piece captures it as part of the same move. The captured piece must be immediately removed from the chessboard by the player making the capture.
5. When one player moves a piece into a position whereby he can attack the King, the King is in "Check" (announced by the CHECK LED and on the LCD display) and must either
  - a) move the King,
  - b) block the path of the attacking piece with another piece,
  - c) or attack the attacking piece.
6. The game is over when there is no escape for the King from an attacking piece. This is known as "Checkmate" (the CHECK and MATE LED and on the LCD display).

### **II. INDIVIDUAL MOVES**

#### **1. KING**

Except when castling, the King can move only one space to any adjoining square (including diagonally) which cannot be attacked by an enemy piece. Castling is a move of both the King and either Rook which counts as a single move (of the King) and is executed as follows:

- a) The King is moved from its original square two squares toward either Rook on the same rank, and
- b) The Rook is moved to the opposite side of the King.

#### **Castling cannot occur if:**

- a) the King has already been moved.
- b) the Rook has already been moved.
- c) the King's original square or the square which the King must cross or the one which it is to occupy is attacked by an enemy piece.
- d) there is any piece between the King and the Rook.

#### **2. QUEEN**

The Queen can move to any square along the same rank, file or diagonal on which it stands (except as limited by Article I.3).

#### **3. ROOK**

The Rook can move to any square along the same rank or file on which it stands (except as limited by Article I.3).

#### **4. BISHOP**

The Bishop can move to any square along the same diagonal on which it stands (except as limited by Article I.3).

#### **5. KNIGHT**

The Knight's move is in the shape of an "L", moving two squares horizontally vertically, and then one square at 90° angle from the first move. These two moves can be reversed (one square and then two) if desired.

#### **6. PAWN**

The Pawn can move either one or two squares forward on its original move, and then one square forward at any time afterward. When capturing, it advances one square diagonally (forward). When a Pawn reaches the last rank, it must be immediately exchanged for a Queen, Rook, Bishop, or a Knight of the same color as the Pawn, at the player's choice and without taking into account the other pieces still remaining on the chessboard. This exchange is called a "promotion".

A Pawn can attack a square crossed by an enemy Pawn which has been advanced two squares in one move from its original square as though the latter had been moved only one square. This capture may be made only on the move immediately following such an advance and is called capturing "en passant". (When your computer makes an en passant capture it will display the symbol "ep".) The en passant moves is also described under section **III.e.** in this instruction.

### **III. HINTS & TIPS**

Get a feel for the values of different pieces, which will be useful when making decisions on captures and exchanges. In general, try to capture the more valuable pieces. Some important principles:

- Castle your King into safety as soon as possible.
- If you control the center squares, this will give you the advantage. To do this, move your center pawns and develop your Bishops and Knights early in the game.
- Take advantage of capture situations, particularly if you will gain material.
- Concentrate – don't be caught off guard by your opponent!

This chess computer has been manufactured under the traditionally high quality and safety standards of Perfect Technology Ltd. and complies with the European standard which is guaranteed by the importer whose name is marked on the enclosed warranty card. Not suitable for children under 36 months due to inclusion of small parts.

Dieser Schachcomputer wurde nach bewährtem Qualitäts-und Sicherheitsstandard von Perfect Technology Ltd. hergestellt und entspricht der Europäischen Sicherheitsnorm für welche der Importeur, dessen Name auf der beigefügten Garantiekarte vermerkt ist, garantiert. Eignet sich nicht für Kinder unter 36 Monaten.

Cet ordinateur d'échecs a été fabriqué suivant les normes de haute qualité et de sécurité de Perfect Technology Ltd. La conformité aux normes européennes est garantie par l'importateur dont le nom figure sur la carte de garantie jointe à l'appareil. Ne pas laisser entre les mains des enfants de moins de 36 mois, des éléments pouvant être avalés.

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