NOVAG®
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INSTRUCTION

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GENERAL HINTS

Your NOVAG Chess Computer can be your tutor if you are a beginner or your challenging chess partner if you are already a chess player. In case you are a beginner, we recommend you familiarize yourself with the rules of chess first. Relevant literature is available in bookstores.

Before you start to play with your NOVAG Chess Computer read first the GENERAL HINTS. The instructions are laid out in such a way that each section is self-contained, so you do not have to read everything at once.

BATTERIES:

The NOVAG Chess Computer runs on 4 x 1.5V UM4-type (or "AAA" size) alkaline batteries (not included). Open the battery door at the bottom of the unit and insert the batteries as indicated by the +/- signs. A set of new alkaline batteries runs approx. 100 hours. Notice that weak batteries make the performance of the computer unreliable.

ADAPTOR:

The NOVAG adaptor (Art.No.8210/1021) is not included with your set, but is available separately from you dealer. Please note that the adaptor is a d.c. 9V adaptor with 300 mA and it has a negative center. If you cannot get the NOVAG adaptor, please make absolutely sure that you only buy an adaptor with exactly these specifications. 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. If you use a too powerful adaptor it might burn the components in you unit.

Note:

Make sure you first connect the adaptor with the computer before you plug it into the mains. The adaptor jack is at the back panel of the computer. We suggest to only use the adaptor, which has been specially developed for this computer. (Use of adaptors with other specifications invalidates the limited warranty).

MEMORY:

The NOVAG Chess Computer has a long-term memory and will retain the last board position. However, make sure that there are batteries in the NOVAG Chess Computer or an adaptor is connected otherwise you will lose the memory contents.

Note: If you are using the SET UP or VERIFY mode the computer will save the current mode when you switch the computer off before you exit these modes. When you switch on the computer again the SET UP LED or the VERIFY LED will be still on. To continue the game or start a new game, press the GO key first to exit these modes.

The indicator lights will be referred to as LEDs (Light Emitting Diodes) in the following instructions.

1.   GETTING STARTED

Set up your board in the opening position. Switch on the computer. The On/Off switch is at the backside of the computer. Select your level of skill (see LEVEL key for more details).

Opening position: White pieces on the 1st and 2nd rank and the Black pieces on the 7th and 8th rank.
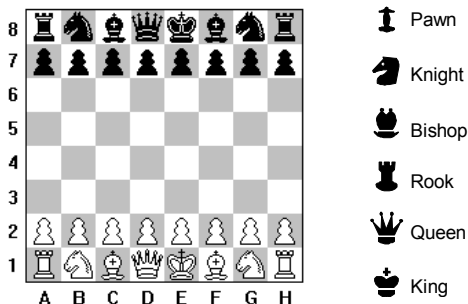
Note: If you switch the computer off to continue at a later time or every time you press the NEW GAME key, the previous set skill level will be retained.

You play White (Choice of Colors. para.8). The WHITE LED lights up. Make your opening move by gently pressing down the piece you want to move. The 2 respective rank and file LEDs light up and point to the square of this piece. Pick up the piece, set it on the square you wish to move to and press it down gently.

Whilst the computer is calculating its move, the BLACK LED will be on. (Never try to enter a move or special functions while the computer is calculating!). When it has found its move the rank and file LEDs light up indicating the "**from**" square of the piece the computer wants you to move. Press this piece gently and pick it up. Now the rank and file LEDs of the "**to**" square comes up and you set the piece on the square, again pressing it gently. The computer's move is thus executed. The WHITE LED comes up again indicating that it is now your move again.

Every time you press a piece, you will hear a beep tone, which indicates that the computer has registered your entry. (See SOUND KEY for more details).

2.   IMPOSSIBLE AND ILLEGAL MOVES

Your NOVAG Chess Computer was programmed in accordance with the international Chess Rules and does not accept or make illegal moves.

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If you try to enter an illegal move, the ERROR LED will light up. Put that piece back on the "**from**" square without applying pressure and enter a legal move. The ERROR LED will disappear.

If you try to move a different piece for the computer than indicated, the two corresponding rank and file LEDs for that square will stay on. Set the wrongly moved piece back on its "**from**" square without applying pressure and move the correct piece as indicated by pressing it down gently.

If, while executing a move for the computer, you move a correct piece to a wrong square, the two corresponding rank and file LEDs for that square will stay on. Just move the piece to the square indicated by pressing it down gently.

3.   CAPTURING A PIECE

If the computer indicates a move onto a square that is occupied by an opponent's piece, it means that this piece is captured and must be removed from the game board. Simply take it from the board without applying pressure.

4.   GAME FEATURES

a)   Castling

The computer displays Castling with the King's and the Rook's move. When Castling press first the 2 squares for the King and then move the Rook by applying pressure on the appropriate squares indicated by the lit up LEDs. Do the same when executing a Castling move for yourself

Note: You may not castle while your King is in check, nor may you castle through check.

This NOVAG Chess Computer accepts and executes Castlings in set up board positions.

b)   En Passant Captures

The computer captures En Passant automatically. You may capture En Passant whenever the rules permit. Do not forget to remove the captured pawn. The computer accepts and executes En Passant moves in set up board positions.
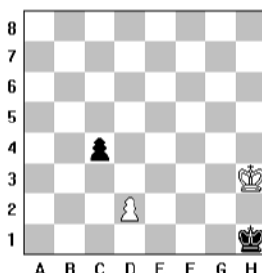
Official Rules of Chess:

A pawn attacking a square crossed by an enemy pawn which has been advanced two squares in one move from its original square may capture this enemy pawn 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**".
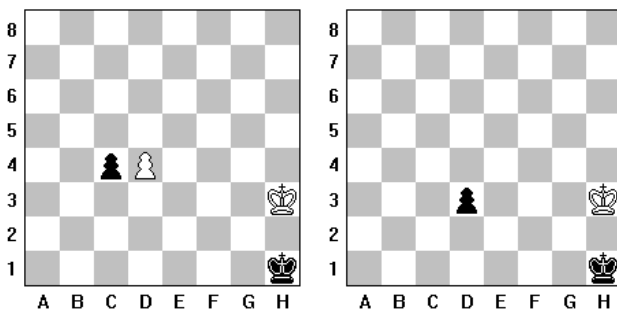
c)   **Pawn Promotions / Underpromotions**

If one of the Pawns reaches the far side of the board, the computer will prompt you for the promoted piece, press any chess piece key (except Pawn and King) for Pawn Promotion.

d)   **Stalemate**

The STALE and MATE LEDs indicate a Stalemate condition.

e)   **Check and Checkmate**

If the computer puts you in check the CHECK LED will light up. If you put the computer in check this will not be specifically displayed. In a checkmate situation the CHECK and MATE LEDs light up indicating the end of the game.

SPECIAL FUNCTIONS

5.   GAME (New Game Key)

Press the NEW GAME key every time you switch the computer on or whenever you want to commence a new game. The previous game is canceled and in the computer memory all pieces are now in the opening position.

6.   SETTING THE SKILL LEVEL (Level Key)

Your NOVAG Chess Computer has a total of 128 level settings to choose from. You can learn and improve your chess skills with this chess computer.

As shown in the chart of playing levels, each level corresponds to one of the 64 board squares. The 128 level settings are grouped into 64 WHITE levels and 64 BLACK levels. The WHITE group setting is indicated by the WHITE LED and for the BLACK group setting the BLACK LED will be on. To describe the Level Settings in this instruction we will use the abbreviation 'W' for WHITE level group and 'B' for BLACK level group.

To set the computer to any of these playing levels press the key marked LEVEL and you will see the current level setting indicated by the two corresponding rank and file LEDs as well as by the WHITE/BLACK LED. If this is not the level that you wish to use, please press the corresponding chessboard square and or the LEVEL key once more to change to the required level group.

For example, if you wish to set level 12 (= Fixed Time Level = WB4), press LEVEL key once or twice for the White level setting, then press square B4. This will be indicated by the corresponding rank and file LEDs. (Please see level chart and list of playing levels below for reference). Once you have set the desired level press GO to exit this mode. Now you may enter your first move.

Numbering system to select the playing levels on the chessboard:

8	A8	B8	C8	D8	E8	F8	G8	H8
7	A7	B7	C7	D7	E7	F7	G7	H7
6	A6	B6	C6	D6	E6	F6	G6	H6
5	A5	B5	C5	D5	E5	F5	G5	H5
4	A4	B4	C4	D4	E4	F4	G4	H4
3	A3	B3	C3	D3	E3	F3	G3	H3
2	A2	B2	C2	D2	E2	F2	G2	H2
1	A1	B1	C1	D1	E1	F1	G1	H1
	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**

Note: When you are selecting the playing levels either the Black or White LEDs as well as the VERIFY and SET UP LEDs will light up.

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 to continue your game at a later time, or press the NEW GAME key, the previous playing level will be retained provided you have batteries in your computer or it is connected to the adaptor.

THE 128 LEVELS AND THEIR CHARACTERISTICS ARE SHOWN BELOW:

• **White Level Group (WA1 - WD8)**
  for FIXED TIME LEVEL SETTING:

There is a fixed computing time per move. The computer will always respond in exactly the specified amount of time, unless there is only one legal move, in which case it will play instantly. In the case that the computer sees it can force a checkmate it will make its move as soon as it finds the mating sequence.

Level		Time		Level		Time	
(1)	WA1	2	sec.	(9)	WB1	60	sec.
(2)	WA2	5	sec.	(10)	WB2	75	sec.
(3)	WA3	10	sec.	(11)	WB3	90	sec.
(4)	WA4	15	sec.	(12)	WB4	120	sec.
(5)	WA5	20	sec.	(13)	WB5	150	sec.
(6)	WA6	25	sec.	(14)	WB6	180	sec.
(7)	WA7	30	sec.	(15)	WB7	210	sec.
(8)	WA8	45	sec.	(16)	WB8	240	sec.
(17)	WC1	5	min.	(25)	WD1	30	min.
(18)	WC2	6	min.	(26)	WD2	40	min.
(19)	WC3	7	min.	(27)	WD3	50	min.
(20)	WC4	8	min.	(28)	WD4	1	hour
(21)	WC5	9	min.	(29)	WD5	2	hours
(22)	WC6	10	min.	(30)	WD6	4	hours
(23)	WC7	15	min.	(31)	WD7	6	hours
(24)	WC8	20	min.	(32)	WD8	8	hours

- **White Level Group (WE1 – WH8)**
  for AVERAGE TIME LEVEL SETTING:

The computer will take an average of the specified amount of time per move. If it has only one legal move it will respond instantly.

Note: These times are average times over a large number of moves. In the opening and endgame the computer tends to play faster, but in complicated middle game positions it may take longer to move.

Level	Time		Level	Time	
(33) WE1	2	sec.	(41) WF1	60	sec.
(34) WE2	5	sec.	(42) WF2	75	sec.
(35) WE3	10	sec.	(43) WF3	90	sec.
(36) WE4	15	sec.	(44) WF4	120	sec.
(37) WE5	20	sec.	(45) WF5	150	sec.
(38)) WE6	25	sec.	(46) WF6	180	sec.
(39) WE7	30	sec.	(47) WF7	210	sec.
(40) WE8	45	sec.	(48) WF8	240	sec.
(49) WG1	5	min.	(57) WH1	30	min.
(50) WG2	6	min.	(58) WH2	40	min.
(51) WG3	7	min.	(59) WH3	50	min.
(52) WG4	8	min.	(60) WH4	1	hour
(53) WG5	9	min.	(61) WH5	2	hours
(54) WG6	10	min.	(62) WH6	4	hours
(55) WG7	15	min.	(63) WH7	6	hours
(56) WG8	20	min.	(64) WH8	8	hours

- **Black Level Group (BA1 - BD8)**
  for EASY LEVEL SETTING:

The Easy levels are especially for novice players. On these levels the computer restricts its search. It deliberately plays weaker, like a human beginner, for whom the computer's depth search is limited to various ply searches with different specified capture depth searches.

Level	Search per move
(65) BA1	1 ply search + 1 ply capture
(66) BA2	1 ply search + 2 ply capture
(67) BA3	1 ply search + 3 ply capture
(68) BA4	1 ply search + 4 ply capture
(69) BA5	1 ply search + 5 ply capture

(70)	BA6	1 ply search + 6 ply capture
(71)	BA7	1 ply search + 7 ply capture
(72)	BA8	1 ply search + 8 ply capture
(73)	BB1	2 ply search + 1 ply capture
(74)	BB2	2 ply search + 2 ply capture
(75)	BB3	2 ply search + 3 ply capture
(76)	BB4	2 ply search + 4 ply capture
(77)	BB5	2 ply search + 5 ply capture
(78)	BB6	2 ply search + 6 ply capture
(79)	BB7	2 ply search + 7 ply capture
(80)	BB8	2 ply search + 8 ply capture
(81)	BC1	3 ply search + 1 ply capture
(82)	BC2	3 ply search + 2 ply capture
(83)	BC3	3 ply search + 3 ply capture
(84)	BC4	3 ply search + 4 ply capture
(85)	BC5	3 ply search + 5 ply capture
(86)	BC6	3 ply search + 6 ply capture
(87)	BC7	3 ply search + 7 ply capture
(88)	BC8	3 ply search + 8 ply capture
(89)	BD1	4 ply search + 1 ply capture
(90)	BD2	4 ply search + 2 ply capture
(91)	BD3	4 ply search + 3 ply capture
(92)	BD4	4 ply search + 4 ply capture
(93)	BD5	4 ply search + 5 ply capture
(94)	BD6	4 ply search + 6 ply capture
(95)	BD7	4 ply search + 7 ply capture
(96)	BD8	4 ply search + 8 ply capture

- **Black Level Group (BE1 - BF5)**
  for FIXED DEPTH LEVEL SETTING:

These levels have fixed computing depth, there is no time limit and the computer will go on calculating up to the depth selected. These levels are important for analysis purpose.

Level		Search per halfmove	Level		Search per halfmove
(97)	BE1	1 ply	(105)	BF1	9 ply
(98)	BE2	2 ply	(106)	BF2	10 ply
(99)	BE3	3 ply	(107)	BF3	11 ply

(100)	BE4	4	ply	(108)	BF4	12	ply
(101)	BE5	5	ply	(109)	BF5	infinite	
(102)	BE6	6	ply				
(103)	BE7	7	ply				
(104)	BE8	8	ply				

LEVEL BF5 is an **Infinite Level**; the computer will normally go on thinking until you press the GO key.

It will only show a move unless:

− it has a "book" move available,
− it runs out of memory for its analysis of the position or
− it completes the analysis by finding a forced mate.

• **Black Level Group (BF6 - BF8)**
 for EQUAL RESPONSE TIME LEVEL SETTING:

On these level settings the computer simulates your response time. You will find this very interesting especially if you wish to play a quick game.

Level		Max Time	
(110)	BF6	30	sec.
(111)	BF7	1	min
(112)	BF8	2	min

On Equal Response Time Levels the computer tries to use more or less the same time to calculate its counter move as you have used to play your previous move. However if you use more time than specified under the above listed playing levels the computer will use the maximum time of the selected level setting to calculate its next move.

• **Black Level Group (BG1 - BG8)**
 for EXTENDED FIXED DEPTH LEVEL SETTING:

On these levels the computer will always respond with its counter move when the selected depth search is reached during the middle game. At the end game play the computer will calculate 2 ply deeper then during the middle game play.

Level		Search per halfmove at middle game		Search per halfmove at end game	
(113)	BG1	1	ply	3	ply
(114)	BG2	2	ply	4	ply
(115)	BG3	3	ply	5	ply
(116)	BG4	4	ply	6	ply

(117)	BG5	5	ply		7	ply
(118)	BG6	6	ply		8	ply
(119)	BG7	7	ply		9	ply
(120)	BG8	8	ply		10	ply

• **Black Level Group (BH1 - BH6)**
  for SOLVE MATE LEVEL SETTING:

Your NOVAG Chess Computer can solve most chess problems as well as mate problems up to Mate-in-6.

Level		Problem
(121)	BH1	Mate in 1
(122)	BH2	Mate in 2
(123)	BH3	Mate in 3
(124)	BH4	Mate in 4
(125)	BH5	Mate in 5
(126)	BH6	Mate in 6

Press the NEW GAME key and set up the required board position (see section 12D.). Before you start with the mate search, it is advisable to verify the set up board position via the VERIFY function and make sure that the color to move is correct. If not change this by pressing the COLOR key. Set now one of the Solve Mate Levels as described above.

Press the GO key once to exit the setting up of the mate search and then press the GO key a second time and the computer begins with the mate search.

Mates-in-1 to Mates-in-3 are usually found quickly, whereas Mates-in-4 to Mates-in-6 require quite a long time. If there is a solution the computer will show you the moves to execute. If there is no solution the ERROR LED will light up.

If you wish to continue the game select another level and enter your next move.

EXAMPLE:

If you wish to solve a Mate-in 2 problem, place the 3 pieces on your chessboard as shown on the diagram.
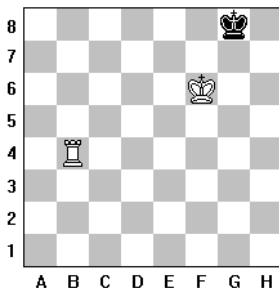
Proceed now as follows and press:

→ NEW GAME key
→ SET LEVEL key → choose BLACK level group and press square H2
→ GO key
→ SET UP key → the Set Up LED will light up
→ CLEAR key
→ KING piece symbol key → press squares F6
→ ROOK piece symbol key → press square B4
→ COLOR key
→ KING piece symbol key → press squares G8
→ COLOR key: it is White to move
→ GO key: to confirm the above setting
→ GO key: to start the mate search

The Chess Computer will answer with the first half move:
1. B4-H4. The Black King can only move G8-F; please execute this move.
The Chess Computer will make its counter-move with 2. H4-H8. MATE!

- **Black Level Group (BH7) = Level 127**
  for RANDOM LEVEL SETTING:

On Random Level the computer selects a random time between 1 – 64 seconds inclusive. The average time will be about 30 seconds per move.

- **Black Level Group (BH8) = Level 128**
  for REFEREE LEVEL SETTING:

On this level the player can enter moves for Black and White. The computer will not calculate any moves but will check the legality of all moves entered. This level may be used to enter particular book openings or to allow 2 players to challenge each other.
Apart from being able to enter moves for both sides, the following functions can still be used: TAKE BACK, CHANGE COLOR, HINT, SET UP, VERIFY, SOUND ON/OFF.

7.   MAIN FUNCTIONS OF THE GO KEY

The GO key is used to enter a command or to exit from a special function. These functions are explained in their respective paragraphs.
The main functions of the GO key:

− To make the Chess Computer calculate for the side to move.
− To terminate the move search (only while the Chess Computer is computing) and call-off a computer move it currently considers the best. Please allow the computer at least

5 seconds of search time before pressing this key so that it has time to compute a reasonable move. The evaluation of these moves does not correspond with the evaluation of the Set-Up level.

- To let the computer play against itself which might be of special interest at a certain point of the game or for learning purposes. Every time you press the GO key the computer calculates for the side to move. All moves will be computed according to the set playing level. Please do not forget to update the board position by moving the pieces without applying pressure.
- To exit from the SET UP mode.
- To exit from the VERIFY mode.
- To exit from the LEVEL mode.
- To accept a HINT. If a hint is shown on display you can press the GO key to accept the hint as though keyed in.
- To start the SOLVE MATE search.

8. CHOICE OF COLOR FOR NEW GAME (Color Key)

The computer is generally set to play Black and you White. If you want 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 chess board and follow the indications shown by the rank and file LEDs.

Now Press:
NEW GAME - COLOR - GO. The computer will make its opening move for White from the top of the chessboard, while you have your Black pieces in front of you.

9. CHANGE OF COLOR (Color Key)

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.
You can also change sides during the game by simply pressing the GO key.
This operation may be performed any number of times during a game, but not whilst the computer is calculating.

In Verify / Set Up mode you can choose with the COLOR key the required color.

10. TAKE BACK A MOVE (Take Back Key)

The NOVAG Chess Computer offers the possibility to take back 25 halfmoves to enable you to rectify your last move.

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Wait until you have executed the computer's reply move. Press TAKE BACK and the rank and file LEDs will show the computer's last move in reverse, e.g. first the "**to**" square and then the "**from**" square. Execute this move just as any ordinary one, i.e. applying pressure on both squares. Press TAKE BACK again and the rank and file LEDs will now show your last move in reverse. Proceed as explained above.

The rank and file LEDs of this square will indicate the square position of a captured piece. Simply reinstate the captured piece by applying pressure onto this square. You may then continue to take back moves if so desired.

Note: If you select the 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.

11. VERIFYING A POSITION
(Ver / Set Key = Verify / Set Up Key)

Any time before entering your next move or after setting up a board position you can check the position of any number of pieces to see if the board position corresponds to the position stored in the computer memory.

- Press the VERIFY / SET UP key **once**, the VERIFY LED lights up.
- The BLACK or WHITE LED will be on, indicating the color of pieces that can be verified. Pressing the COLOR key can change the color.
- Select the type of piece(s) to be verified by pressing the key marked with the symbol of the piece.
- To end the procedure press the GO key.

Everytime you press a symbol key the respective rank and file LEDs will light up to verify the board position of the chess piece(s) in question. Pressing the symbol key repeatedly will scan through all pieces of this type from left to right. After all those pieces have been called off press the symbol key once more. All rank and file LEDs are off, meaning that no further pieces of this kind are on the board and in the computer's memory. You can now call off the next type of pieces.

To end the verification at any time simply press the GO key.

12. SETTING UP A POSITION
(Ver / Set Key = Verify / Set Up Key)

You can go into SET UP mode at the beginning of a new game or during a game before you enter your next move.

In SET UP mode you can enter or remove pieces or set up board positions to solve chess problems. In SET UP mode the computer's legality check is disabled and entries do not have to comply with the chess rules.

Note: After leaving SET UP mode the WHITE or BLACK LEDs indicate which color is to move. If a change of color is required press the VERIFY / SET UP key again, change the color with the COLOR key and press GO. You can now enter a move for this color or call off a move from the computer by pressing GO again.

12.A.   REMOVING A PIECE
If you wish to remove one or more pieces from the board proceed as follows:

- Press the VERIFY / SET UP key **twice**, the SET UP LED lights up.
- The BLACK or WHITE LED will be on indicating the color of pieces that can be removed. Pressing the COLOR key can change the color.
- To remove the piece(s) press the square it stands on. The rank and file LEDs will light up to indicate that this piece is deleted from the chessboard.
- To end the procedure check first if you want to change the color to move then press GO. You can now enter a move for this color or call off a computer move by pressing GO again.

12.B.   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 VERIFY/SET UP key **twice**, the SET UP LED lights up.
- Move the piece(s) by pressing on the "**from**" and "**to**" square as in a normal move (the rank and file LEDs light up).
- To end this procedure press the GO key.

12.C.   CLEARING THE ENTIRE BOARD: (Clear Key)
If you wish to clear the entire board (to enter a board position thereafter) proceed as follows:

- Press the VERIFY / SET UP key **twice**, the SET UP LED lights up.
- Press the CLEAR key and the entire board will be cleared.
- You may now set up a board position.

12.D. ENTERING A PIECE:

If you want to enter one or several pieces or enter a board position, proceed as follows:

- Press the VERIFY / SET UP key **twice**, if you are not yet in SET UP mode. The SET UP LED lights up.
- If you want to clear the entire board press the CLEAR key (see para 12.C.)
- The color of the pieces to be entered can be changed with the COLOR key. The WHITE and BLACK LEDs indicate which color can be entered.
- Select the piece by pressing the corresponding symbol key.
- Enter the piece(s) of this kind by placing each on the desired square pressing it down lightly. The respective rank and file LEDs will come up for each square.
- Choose the next piece type by pressing the symbol key and enter the piece(s). The color has to be changed only if it differs from the color of the previously entered piece(s).
- To end the procedure press GO.
- Check if you want to change the color to move first as explained above before you enter a move or call off a move from the computer.

Note: Use the Verify mode to check that you have entered the position correctly.

13. MOVE SUGGESTION (Hint Key)

The computer can suggest moves if you are not sure how to continue your game, which is a great tutoring feature.

When it is your turn to move press the HINT key and the computer will show the move it considers the best for the color to move. You can accept any suggested move or may make a move of your own choice. If you accept the suggested move (shown on the chessboard by the blinking rank and file LEDs) press the GO key and the computer will then start calculating its counter move. If you decide to make a move of your own choice ignore the suggested hint and execute your move accordingly.

Showing how the computer is calculating:
Pressing the HINT key whilst the computer is calculating its counter move will show you (by the rank and file LEDs) the current best possible move.

Note: The suggested move is the best possible move in this position calculated by your NOVAG Chess Computer at the level preset by you.

14.   TRAINING FUNCTION (Training Key)

This function is to help the novice player.
- When it is your turn to move press the TRAINING key and the blinking LEDs will show the "**from**" and "**to**" squares of the first piece with a legal move.
  If you continue to press the TRAINING key the computer will show you the next possible move of that particular piece.

- The computer will terminate the TRAINING function once you have cycled through the last chess piece by pressing the TRAINING key.

- If you like to make the suggested move indicated by the blinking LEDs press the GO key and the NOVAG Chess Computer will make its counter move.

- If you wish to make any other move, execute the move of your choice by gently pressing onto the "**from**" and "**to**" square and the computer will reply accordingly.

- In order to cycle faster through the TRAINING function, you can press the LEVEL key and this will show you the "**from**" and "**to**" square of the next chess piece with a legal move.

- Please note that once you have cycled through the TRAINING function by using the LEVEL key the VERIFY/SET UP and BLACK/WHITE LEDs will light up as well as the rank and file LEDs indicating the previous set level.

- Press the GO key to exit this function and enter now your next move for White or call off a computer move by pressing again the GO key.

15.   ACOUSTIC SIGNALS (Sound Key)

The acoustic signals and beeps can be switched ON and OFF with the SOUND key.

WARRANTY
For details please refer to the enclosed Warranty Card.

CARE OF YOUR NOVAG CHESS COMPUTER
Dirt or dust can be removed with a soft cloth. Do not use chemical solvents or water on the set. Any damage caused by their use invalidates the warranty. Always keep the 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.

TECHNICAL INFORMATION

- Program Size   16 KByte ROM, 768 Byte RAM
- CPU clock speed   8 MHz
- Power Consumption   130 mW max
- Power supply   4 x 1.5V UM-4 type (or AAA size) **alkaline batteries** or Novag adaptor (Art.No. 8210/1021)
- Conductive Rubber Keyboard   16 Keys
- Move entry via   Sensor chessboard
- Extra Error LED
- Levels   128
- Take Back   25 halfmoves
- Set Up and Verify mode
- Opening book size   8500 moves
- Solve mate in   6
- Hint and Training function
- Elegant board   194 x 133 x 25 mm

Technical changes without notice in the interest of progress.

IMPORTANT INFORMATION

- Before replacing/inserting batteris, turn the unit off first and remove the adaptor if connected.
- Insert 4 (four) fresh "AAA size" batteries following the polarity drawings inside the battery compartment. For optimal performance Alkaline batteries are recommended.
- Do not place any other object(s) but batteries as described above in the compartment and do not use any objects but ribbon (as described) to remove the batteries.
- Batteries must be removed when exhausted and change batteries under adult supervision only.
- Use new alkaline batteries of the same type only. Do not mix old and new batteries. And also, do not mix Alkaline, standard (carbon-Zinc) or rechargeable (nickel-cadmium) 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 transformer /adaptor used with the computer 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 computer, the battery charger/adaptor/transformer (or any other electrical appliance 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.
- The chess computer is not intended for children under 3 years old.
- Do not short-circuit the unit, supply terminals, battery charger or any other electrical appliance.
- Packing has to be kept since it contains important information.
- Dirt or dust can be removed with a soft cloth. Disconnect the power supply of the chess computer and remove all batteries before cleaning. Do not use chemical solvents, water or any other fluids on the chess computer. Any damage caused by their use invalidates the warranty. Always keep the 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.

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 that moved to a square occupied by an enemy piece captures it as part of the same move. The player making the capture must immediately remove the captured piece from the chessboard.

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 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).

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 1.3).

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 are also described under section **4.b** 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!