

NOVAG®

citrine

INSTRUCTION

GENERAL HINTS

PACKAGING
ADAPTOR
RESET BUTTON
MEMORY
SET UP OF THE CHESS COMPUTER
LCD DISPLAY

SHORT INSTRUCTIONS

PLAYING A GAME
USING THE MENU SYSTEM

GAME FEATURES

- I. Making a Move
- II. Capturing a Piece
- III. Taking Back a Move
- IV. Trace Forward a Move
- V. Impossible and Illegal Moves
- VI. Castling
- VII. En Passant
- VIII. Pawn Promotion / Underpromotion
- IX. Stalemate and Draw
- X. Check and Checkmate
- XI. Mate Announcement
- XII. Resignation
- XIII. Positioning of Chess Pieces / New Game

FEATURES

1. NEW GAME
2. SQUARE A8: SET LEVEL
3. SQUARE B8 : RANDOM
4. SQUARE C8 : EASY
5. SQUARE D8 : SOUND
6. SQUARE E8 : REFEREE MODE
7. SQUARE F8 : AUTOPLAY
8. SQUARE G8 : GAME REVIEW (ORIGIN)
9. SQUARE H8 : FLIP BOARD / CHANGE COLOUR [FLIP]
10. SQUARE A7 : SET UP
11. VERIFY
12. GO
13. LCD Information

APPENDIX

Care of your NOVAG chess computer
Technical Data and Features
Examples of the LCD Display
Rules of Chess
Hints & Tips

GENERAL HINTS

PACKAGING

Packaging should contain a wooden chessboard, 1 set each of black and white wooden chess pieces, 1 additional function access piece, 1 LCD box, 1 LCD box connection cable, 1 adaptor, 1 PC connection cable, 1 instruction manual. Please keep packaging as it contains important information. In the event of a defect please return the unit in complete packaging for repair.

ADAPTOR

The NOVAG dc 9V adaptor with 300mA, negative centre, (Art.No.1021) is included with your set and should always be used. If you use an adaptor with different specifications you might damage your unit, which invalidates the warranty. Before using the adaptor, check that the voltage of your electric mains is within the range specified on the adaptor label.

IMPORTANT NOTICE: Any adaptor should be examined regularly for potential hazards, such as damage to the cable, plug, or other parts, and that, in the event of such damage, the adaptor must not be used until that damaged part has been properly removed or repaired. Please note that an adaptor is not a toy. If you do not use your computer over a long period of time, please remove the adaptor. Never short-circuit the unit, or any other electrical appliance or any supply terminals.

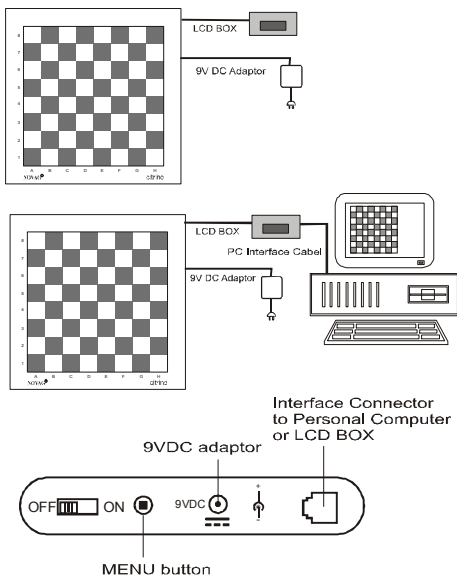
RESET BUTTON

The RESET button is located on the back of the chess computer. To reset use a thin instrument (e.g. ballpen) to poke into this hole and hold it for 5-10 seconds. The memory will be reset after this procedure.

MEMORY

This chess computer has a long term memory and will retain the last board position. However, make sure that the adaptor is connected otherwise you will lose the memory contents.

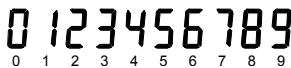
SET UP OF THE CHESS COMPUTER



LCD DISPLAY

The LCD display has a six character alphanumeric display and is located in the black box that should be connected to your wooden board during a game (see above drawing). If you wish however, you can play a game without the LCD box and reconnect it at any time.

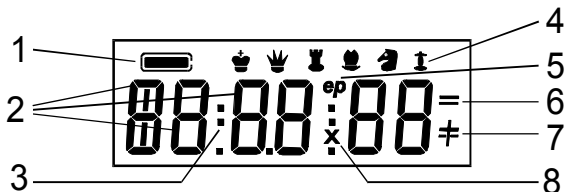
1. Figures



2. Letters and symbols









THE DISPLAY



- | | |
|--------------------------------------|---------------------------------|
| 1 = Indication for the colour | 5 = Symbol for En Passant |
| 2 = 6 character alphanumeric display | 6 = Symbol for Stalemate/Draw |
| 3 = Separation for time indication | 7 = Symbol for Check/Checkmate |
| 4 = Symbols for chess pieces | 8 = Symbol for captured figures |

Symbols for the chess pieces on the display

-  Pawn
-  Knight
-  Bishop
-  Rook
-  Queen
-  King

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

SHORT INSTRUCTIONS

PLAYING A GAME

1. Make sure the unit is turned OFF. Plug in the LCD BOX. Then connect the adaptor with the chess computer before you plug it into the mains. 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 is a 2-position switch and is located on the right side of the board. It is marked ON/OFF. Please push it to the ON position.
3. The computer will automatically recognize a new game as soon as the chess pieces are set up in the opening position (see above) and 3 beeps will sound. Please note that the chess pieces have to be placed in the middle of the square. If not, the square LEDs will light up until you have placed the piece in the middle of the square.
4. You may now enter your first move as White. The LEDs on the “from” square and the LEDs on the “to” square will light up as soon as they are touched by the piece. At the same time your move will be shown on the LCD display. Once completed the unit will start computing its counter move.
5. The computer’s counter move will be shown in the plugged-in LCD BOX and will also be indicated by the LEDs on the respective squares. Please make the move for the computer according to the indicated LED lights/ LCD display.

USING THE MENU SYSTEM

This Novag chess computer uses a menu system, which is controlled via squares A8 – H8 and A7 on the chessboard. Using the menu system is relatively simple. Here are some general guidelines:

1. Push the Menu button on the right hand side of your unit. This will start the Menu mode of the chess computer. The LCD will continuously display each available function in a rotating fashion. At the same time the corresponding square on the chessboard will light up.
2. The magnet sensor chessboard works as follows: each chess piece and each square has a magnet embedded. Once the magnet inside a chess piece and the magnet on the square will come into contact, the chess computer will record it. Each time you lift a chess piece off the board the unit will note this as well because the magnets lost contact and so on.
3. You may enter a function at any time by placing the function access piece on the respective square. If a chess piece is already placed on this square, simply lift it up and put it back. Following functions are available:

Square A8 = LEVEL SETTING

Square B8 = RANDOM

Square C8 = EASY

Square D8 = SOUND

Square E8 = REFEREE

Square F8 = AUTOPLAY

Square G8 = GAME REVIEW

Square H8 = FLIP BOARD / CHANGE COLOUR

Square A7 = SET UP

4. If you have chosen the “wrong” function, please press the menu button on the side of the unit to exit this mode and re-press it to enter the menu mode once again.
5. To change the settings of a chosen function, re-tap the same square as many times as necessary until the desired setting is displayed on the LCD screen (see individual chapters for details).
6. To exit and save the chosen setting, push the Menu button on the right hand side of the unit. This action will exit the menu and you can start/ resume your game. Please make sure to remove any additional piece you have placed on the chessboard before you resume your game.

7. **GO:** Your KING represents the GO KEY. Briefly lift your King off the board to enter GO.

Note: Whenever the unit is computing the colour indicator on the LCD is flashing (bar on top left corner of LCD). In this case the menu mode cannot be accessed.

To change a level setting please refer to chapter: SQUARE A8 SET LEVEL

GAME FEATURES

I. Making a Move

This chess computer has a magnet-sensor chessboard, which registers your moves automatically when the pieces are moved. Moves to be executed for the computer are indicated by the LED lights on each square 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.

II. Capturing a Piece

If the chess computer 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 chess computer, first lift the capturing piece of the board then replace the captured piece. If you wish to make a capture, make this move as for a normal one and remove the captured piece.

III. Taking Back a Move

Use this function to retract a bad move or just try a different line of play. Wait until it is your turn to move and then take back the computer's last move (indicated on the LCD). Once completed, the square LEDs of the previous move will light up and the move will also be shown on the LCD. Make that respective move and the computer will illuminate the square LEDs of the move preceding that one (also displayed on the LCD), and so on. If a captured piece is involved make the move as indicated by the LEDs and the LCD, then place the captured piece back on the square that is illuminated (also shown on the LCD). To exit this mode and continue play, simply input your next move when it is your turn or force the computer to make a move via GO (lift your King off the board briefly).

Note: If you select the COLOUR 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 colour or position. If no moves are in the game history the LCD will show [**bEG in**]. The computer can store up to 112 halfmoves. When you reach the beginning of the current game the display will show [**bEG in**] and when you have reached the New Game Position the computer will display [01 -- --].

IV. Trace Forward a Move

Use this function if you wish to trace your moves forward again after having taken them back with either TAKING BACK A MOVE (see above) or the GAME REVIEW FUNCTION (see below Features: Square G8). All moves taken back previously will be stored in the memory and can be traced forward. Wait until it is your turn to move, briefly lift your King off the board (Go). The square LEDs of the current move of the move history will light up for 6 seconds. Make that respective move within 6 seconds and the computer will illuminate the next current move of the move history going forward. If there is no more move, the LCD will display "END". You can at anytime ignore the LEDs trace forward indication and execute your move. The computer will then calculate its response move and the move history up to this move will be erased.

V. Impossible and Illegal Moves

This Novag chess computer is programmed in accordance with the International Chess Rules and does not accept nor make illegal moves. Corrections of illegal moves or mistakes in executing computer moves are very simple.

- If you try to make an illegal move, you hear 3 beeps and the LCD display will show "**Error**". Retract your move and make another legal move.
- If you try to move the wrong piece when executing a computer move, your move will not be registered and the computer will continue flashing the correct squares and displaying the correct coordinates.

VI. 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.

VII. 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. When the computer makes an En Passant capture it will show "**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 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**.

VIII. 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. As soon as this happens, squares A1 to D1 will flash up, whereas A1 represents the Rook, B1 represents the Knight, C1 represents the Bishop and D1 represents the Queen. You can now choose the piece you want to promote to by tapping the respective square, e.g. tap on square D1 (or lift the chess piece standing on that square briefly) if you wish to promote your Pawn to a Queen. 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. Please replace this piece accordingly and the LCD will clear and be ready for your countermove.

The computer also accepts/executes pawn promotions in set-up board positions.

IX. Stalemate and Draw

- The computer announces a Stalemate by the word "**dr StL**" on display. This Novag chess computer 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**".

X. 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 colour.

XI. Mate Announcement

The unit will always announce mate if it sees it and will show the numbers of moves to mate on the LCD (for example: "**n 4**" means Mate-in-4).

XII. Resignation

If the computer believes its position is hopeless, it will announce "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.

XIII. Positioning of Chess Pieces / New Game

Please note that each chess piece has to be placed in the middle of a square for the computer to register it. If you have not placed a piece in the middle of a square the LEDs will light up. Please move that piece to the middle of the square before you continue your game.

FEATURES

1. NEW GAME

As soon as you have set up the chess pieces in the New Game Position the computer will be ready for a new game. The memory is now empty and only the previously set level remains the same.

2. SQUARE A8: SET LEVEL

This chess computer has 8 different types of Levels and 64 unique time controls to suit every type of players (**TR** = Tournament Level, **AT** = Average Time Level, **SD** = Sudden Death Level, **FD** = Fixed Depth Level, **AN** = Analytical Level, **EA** = Novice Level, **BE** = Beginner Level, **IN** = Fixed Mate Level). Each square on the chessboard represents a specific level setting:

NUMBERING SYSTEM FOR THE SELECTION OF PLAYING LEVELS ON THE CHESSBOARD

8	TR8	AT8	SD8	FD8	AN8	EA8	BE8	IN8
7	TR7	AT7	SD7	FD7	AN7	EA7	BE7	IN7
6	TR6	AT6	SD6	FD6	AN6	EA6	BE6	IN6
5	TR5	AT5	SD5	FD5	AN5	EA5	BE5	IN5
4	TR4	AT4	SD4	FD4	AN4	EA4	BE4	IN4
3	TR3	AT3	SD3	FD3	AN3	EA3	BE3	IN3
2	TR2	AT2	SD2	FD2	AN2	EA2	BE2	IN2
1	TR1	AT1	SD1	FD1	AN1	EA1	BE1	IN1
	A	B	C	D	E	F	G	H

LEVEL CHART

Level	Square	Time Control	Level	Square	Time Control	
TR	1	a1	AN	1	e1	9 ply search
	2	a2		2	e2	10 ply search
	3	a3		3	e3	11 ply search
	4	a4		4	e4	12 ply search
	5	a5		5	e5	13 ply search
	6	a6		6	e6	14 ply search
	7	a7		7	e7	15 ply search
	8	a8		8	e8	Infinite search
AT	1	b1	EA	1	f1	1 ply search with capture search:
	2	b2		2	f2	1 ply + 2 captures
	3	b3		3	f3	1 ply + 3 captures
	4	b4		4	f4	1 ply + 4 captures
	5	b5		5	f5	1 ply + 5 captures
	6	b6		6	f6	1 ply + 6 captures
	7	b7		7	f7	1 ply + 7 captures
	8	b8		8	f8	1 ply + 8 captures
						1 ply + 9 captures
Level	Square	Time Control	Level	Square	Time Control	
SD	1	c1	BE	1	g1	2 ply + 2 captures
	2	c2		2	g2	2 ply + 3 captures
	3	c3		3	g3	2 ply + 4 captures
	4	c4		4	g4	2 ply + 5 captures
	5	c5		5	g5	2 ply + 6 captures
	6	c6		6	g6	2 ply + 7 captures
	7	c7		7	g7	2 ply + 8 captures
	8	c8		8	g8	2 ply + 9 captures
FD	1	d1	IN	1	h1	mate in 1
	2	d2		2	h2	mate in 2
	3	d3		3	h3	mate in 3
	4	d4		4	h4	mate in 4
	5	d5		5	h5	mate in 5
	6	d6		6	h6	mate in 6
	7	d7		7	h7	mate in 7
	8	d8		8	h8	mate in 8

Description of level time controls:

Tournament Level TR 1 - TR 8

For tournament time controls. All moves are pre-set which have to be played within a fixed time, e.g. 40 moves in 120 min. (level 8 is the strongest). If you or the computer exceeds the specified time control, the game will be declared lost and the LCD will display [FLAG].

Average Time Level AT 1 - AT 8

These levels are to be used for casual play. They allow you to enter the average response time per move for the computer (see table above). The computer tends to play faster during opening and end games.

Sudden Death Level SD 1 - SD 8

The computer has to finish its game within a given time. If you or the computer exceed the specified time control, the game will be declared lost (clocks count down to zero and LCD shows [FLAG] and 3 beeps to warn you if you overstep). If you wish you can continue to play and finish the game. On the LCD display the total time used will be shown and will count continuously.

Fixed Depth Level FD 1 - FD 8

Important for analysis purpose. The computer will only compute up to the depth selected. This provides a means of limiting the chess computer play to suit a wide range of opponent's abilities.

Analysis Level AN 1 - AN 8

These levels provide deeper searches for more difficult problems.

Novice Level EA 1 - EA 8

1 ply search with limited capture search. These levels provide a level of play even suitable for novice players.

Beginner Level BE 1 - BE 8

2 ply search with limited capture search. These levels provide a level of play for mediate beginner.

Note:

All of the above levels can be modified by turning on the EASY mode. This keeps the computer from searching while you are thinking and weakens its play.

Find Mate Level mate-in-1 to mate-in-8

On Find Mate levels the computer will find the shortest mate up to the stipulated depth. The Find Mate levels use a different program than the normal playing levels. The normal playing levels will generally find a check mate in any given position in less time, and generally in much less time than the Find Mate levels. However, the normal playing levels do not guarantee that the check mate found is the *shortest* mate possible. The following position illustrates this point. On Find Mate level 4, it takes the computer 40 seconds to find Bxa7 and announce mate in 3 more moves. However, on the normal playing levels it takes the computer only 11 seconds to find e2-e4 which is in this case a Mate-in-5 moves! (Figure 1.)

Figure 1:



Figure 2:



On the other hand, the mate in 6 moves is found much faster by Find Mate level 6. (Figure 2.). Generally expect the Find Mate levels 5, 6, 7 and 8 to take a long time. If there is no mate in the stipulated number of moves the LCD display will show [no nE]. The solution to this position is Rb8 and takes about 46 seconds on Find Mate level 6 but takes a couple of hours on regular search!

How to select a Level

To select a level you must first enter the level setting mode: press the MENU button on the right hand side, tap square A8 with the function access piece (if a chess piece is already standing on

that square, please lift it up briefly). The current level setting will be displayed on the LCD and the LEDs on the corresponding square will light up. If you wish to change the level setting tap the square corresponding to the level you wish to set (please see LEVEL CHART at the beginning of this chapter) and the LCD will show the level number. For example if you wish to set level At 4, enter the SET LEVEL mode and then tap the square B4. On the LCD display you will see [LE.At4]. To save the level setting and exit, press the MENU button on the right hand side of the unit.

Note: You can always check or change the skill level during a game, however not whilst the computer is calculating! Changing level resets the clocks. If you switch the computer off to continue your game at a later time or if you start a new game, the previously set skill level will be retained.

3. SQUARE B8 : RANDOM

Every time you switch the computer on, the move with the highest rating is chosen automatically, based on the depth of the search which is determined by the skill level. This is always the case after the opening is finished.

If you select the RANDOM function when in the MENU mode (see “USING THE MENU FUNCTION” above) you can choose various levels of randomness. To do so, tap on square B8 and any of the following random levels will be displayed in the LCD each time you tap on the square: **rAnd / r And - / rAnd = / rAnd ≡** (Level "rAnd" is the least random). The computer will select a move at random from a list of possible moves which are similar in their evaluation. To save and exit, press the MENU button on the right hand side of the unit.

4. SQUARE C8 : EASY

The chess computer always uses the opponent's time to compute its best response since it has predicted your move and completed its assessment of your move. To disable this advantage please enter the EASY function (see “USING THE MENU FUNCTION” above). When this mode is activated you will see the message "**EASY =**" on the LCD and if turned off you will see "**EASY**". To turn it on or off, please toggle square C8 and it will change from "**EASY =**" to "**EASY**" with each tap, then press the MENU button on the right hand side of the unit to save and exit.

5. SQUARE D8 : SOUND

There are 2 different sound settings which will be indicated on the LCD display. To change the setting enter the SOUND mode (see “USING THE MENU FUNCTION” above). Tap on square D8 as many times as necessary until you see the desired sound setting in 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.

6. SQUARE E8 : REFEREE MODE

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.

Once in the REFEREE mode (see "USING THE MENU FUNCTION" above), tap on square E8 to change from REFEREE off "rEF" to REFEREE on: "rEF =". The following features are still available whilst in this mode:

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

7. SQUARE F8 : AUTOPLAY

Your computer can play against itself and can be set to the following functions:

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 function are off and you are in the normal playing mode.

To enter any of the settings above press the MENU button and then tap square F8. The default setting is "nor". To choose either AUTO or DEMO re-tap this square until you see the desired setting. Press the MENU button again to exit and the computer will immediately start its game. All moves are shown via the LEDs on the chessboard and also on the LCD display. If your board is connected to a PC you can follow the game on your computer screen, if not you can execute the moves for the computer and follow it on your chessboard.

To exit this mode whilst the computer is still executing opening moves (the LCD will only display the move it makes), set the chess pieces up in the opening position. But please bear in mind that this will cancel the current game.

Once the game is more advanced and is out of the opening book (the LCD shows its thought process during each move now) you can enter GO (lift your King off the board briefly) to exit the AUTOPLAY / DEMO mode. The move currently being calculated must be executed before the computer exits this mode.

Note: The Autoplay/ Demo mode can be entered at any time during the game.

8. SQUARE G8 : GAME REVIEW (ORIGIN)

This function allows you to replay your game. The computer can store up to 112 halfmoves in its memory, which will normally 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 and the moves need to be traced back to the origin.

To activate the GAME REVIEW function, push the MENU button on the right side of the chessboard. Lift the chess piece on square G8 to enter this function (if there is no piece, please use the spare menu piece) and ORIGIN will be displayed in the LCD. Tap this square again and the LCD will show BEGIN to indicate that this function has been successfully activated. Push the

MENU button on the right side of the chessboard to exit and trace back your moves to the original position. Once the game has been traced back, lift your King off the board briefly to start the Game Review. The chessboard will illuminate the squares of the first move made for 6 seconds. Make this move as indicated. Once the move has been executed the computer will show the next move that was made in the same way. Once you have reached the end of your game the LCD will display END.

Note: Should you enter a different move you will erase all the previous move history and the computer will treat this as a new move history.

9. SQUARE H8 : FLIP BOARD / CHANGE COLOUR [FLIP]

Flip Board

The computer is generally set to play Black and you White. If you wish to play Black in a new game, you can set up the Black pieces on rank 1 and 2 and the White ones on rank 7 and 8. Now you have to let the computer know that you have changed colour:

To enter the Flip Board mode, press the MENU button on the right side of the chessboard and then tap on square H8 with a chess piece (if a piece is on that square already briefly lift it off the board). Now you have to tap square H8 once again to let the computer know that you wish to flip the board and that the black pieces are set up on rank 1 and 2 and the white pieces on rank 7 and 8. Press the MENU button on the right side of the chessboard to exit. To begin the game and ask the computer to make its first move enter go (lift your black King off the board briefly). The computer's move will be displayed on the LCD and the corresponding square LEDs will light up. NOTE. Disregard the notations along the chessboard in this set up and note that the MENU access fields have changed to the following (imagine the board being turned around):

H1 = LEVEL SETTING
G1 = RANDOM
F1 = EASY
E1 = SOUND
D1 = REFEREE
C1 = AUTOPLAY
B1 = GAME REVIEW
A1 = FLIP BOARD / CHANGE COLOUR
H2 = SET UP

Change Colour (beginning of a game)

If you would like to play Black but you do not wish to change the New Game position as described above, i.e. White pieces stay on rank 1 and 2, Black pieces on rank 7 and 8, you just have to prompt the computer to make its first move. To do that lift your black King off the board briefly, the computer will then indicate its first move for White via the LEDs and the LCD.

Change Colour (during a game)

The Change Colour function can be entered at any time during a game and the colour to move will be reversed. Any moves made prior to entering this function will be erased and the game history will begin with this position. If you are in the SET UP mode you can choose the colour to move first via the Change Colour mode.

To enter the Change Colour function, press the Menu button on the right side of the chessboard and tap square H8. Now the computer knows you have entered the Change Colour function. To change the colour tap this square again. To exit the MENU mode and continue the game, press the Menu button again. It is now your turn to play the other colour.

10. SQUARE A7 : SET UP

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 colour . . . etc.

EXAMPLE:

To solve a Mate-in-3 problem you have to proceed as follows:

1. Press the menu button on the right hand side of the chessboard.
2. Touch square A8 with the function access piece (if a piece is already on that square simply lift it up briefly). Now you are in the SET LEVEL mode.
3. Touch square H3 with the function access piece (if a piece is already on that square simply lift it up briefly). Now you have determined IN 3 as your level (that is solve Mate-in-3 problem).
4. Press the menu button to exit the SET LEVEL mode.
5. Press the menu button again to enter the SET UP mode.
6. Touch square A7 with the function access piece (if a piece is already on that square simply lift it up briefly). Now you are in the SET UP mode.
7. Remove all chessmen off the board with the exception of the white king and the black king. Please take care that you remove one piece at a time only!



9. We will start placing the white pieces first.
 - **WHITE KING:** You have to tap the square on which the white king is located so many times as necessary until you see the symbol for WHITE and the symbol for KING on the LCD. Then place the white king on square A1.
 - **WHITE QUEEN:** lift the white king of the board as many times as necessary until you see the symbol for WHITE and the symbol for QUEEN. Make sure that you only lift it off the square it was originally placed on. Now take the white queen and place it on square H2.

- **WHITE ROOK:** lift the king off the board again until you see the symbol for WHITE and the symbol for ROOK. Now take a white rook and place it on square F5. To place the second rook, just place it on square C6. You do not have to tell the computer that you are planning to place a white rook via the king again, because you have already told the computer previously and the computer has not changed its setting.
- **WHITE BISHOP:** lift the white king off the board until you see the symbol for WHITE and the symbol for BISHOP. Then place one white bishop each on square E5 and D7.
- **WHITE KNIGHT:** you need to tell the computer again that you would like to change the chess piece: lift the king of the board briefly until you see the symbol for WHITE and the symbol for KNIGHT. Now place a white knight on square A2 and another one on C2.
- **WHITE PAWN:** to finish the set up for the white pieces, lift the king briefly off the board until you see the symbol for WHITE and the symbol for PAWN. Now simply place a white pawn each on the following squares: D2 and F6. The set up for the white chessmen has been completed.

10. Set up of black chessmen:

- **BLACK KING:** lift the black king off the board until you see the symbol for BLACK and the symbol for KING in the LCD. Then place the black king on square D5.
- **BLACK ROOK:** lift the black king off the board until you see the symbol for ROOK and the symbol for BLACK and place one rook each on square D3 and H3.
- **BLACK BISHOP:** lift the king again until you see the symbol for BLACK and the symbol for BISHOP. Now place the black bishop on square F8.
- **BLACK KNIGHT:** to set the two knights, lift the king again until you see the symbol for BLACK and KNIGHT and place them on squares A7 and F7 respectively.
- **BLACK PAWN:** to complete the set up, please lift the black king again until you see the symbol for BLACK and the symbol for PAWN and place one pawn each on the following squares: C7, B6, G6, C5, G5, C4, and E4.

11. The set up is now complete. Please note that if you would like the white chess pieces to start you have to lift the white king **PRIOR** to leaving the set up mode. This motion will tell the computer that you would like the white pieces to have the next move. Press the menu button to exit the set up mode and start solving the chess problem.

12. SOLUTION:

WHITE	BLACK
c2 - d4	d3 x d4
e5 - g3+	f7 - e5
f5 x e5+	mate

Entering or moving a piece / setting up a board position

To enter the Set Up mode, press the MENU button on the right side of your chessboard and tap square A7 with a chess piece. Now you can remove and enter chess pieces as you wish:

- **To remove a chess piece:** Simply take it off the board at any time. The computer will register this and the LCD will display "CLR xx" for 1 sec. At the same time the corresponding square LEDs are flashing. Wait until the square LEDs stopped flashing before you continue.
- **To select a placing chess piece:** You must tell the computer first which color and kind of chess piece you would like to place. To do that lift the corresponding color King piece briefly off the board as many times as necessary until you see the desired piece in the LCD window. Example: to select a black Knight, lift the black King off the board as many times as necessary until you see the black Knight symbol on the LCD.

Note: Do not forget to reselect a chess piece if you want to change the kind of chess piece, e.g. a Pawn after a Knight.

- **To place a selected chess piece:** After a desired color chess piece has been selected, you may place that chess piece onto any empty board square. The computer will register this and display "SET xx" for 1 sec. in the LCD. In our example you can place the black Knight on the desired square. Please wait until the square LEDs stopped flashing before you continue.
- **To choose a colour to move:** The colour to move is always indicated on the LCD colour symbol. If changing is necessary, lift the corresponding colour King piece briefly off the board before exiting the SET Up mode.

To exit and save that position press the MENU button on the right side of the board. If you exit the SET UP mode with an illegal position, you will hear three beeps and the [Error] sign will be on display. The chess computer will automatically return to the SET UP function so you can rectify your error.

Note:

- The computer will accept and execute castlings, pawn promotion and en-passant captures if you play from a set up board position.
- All previous stated moves are cancelled as soon as you enter the SET UP mode.
- If you wish to terminate the SET UP mode place all chess pieces in NEW GAME position.
- **Please wait until the computer has registered your placement/removal of a chess piece before you continue (the square LEDs will stop flashing)**

11. VERIFY

You can verify a chess piece at any time during a game, by simply lifting it up. Once the chess piece is off the board check the LCD to see if the chess piece symbol and colour correspond with the one just lifted off the square.

12. GO

The GO Key is used in conjunction with many of the chess computer's special functions. In order to activate GO, please lift your King off the board briefly.

MAIN USES:

- To start the SOLVE MATE search.
- To start the AUTOPLAY/ DEMO mode.

- To interrupt the computing time and force 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. In this case you have to lift the opponent's King off the board briefly, e.g. if you play white, wait until it is your turn. Lift the black King off the board briefly. The computer will now compute a move for white, and you will play the black 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 activate GO the computer calculates for the side to move. All moves will be computed according to the set playing levels. For example if you are playing white:
 - Wait until it is your turn.
 - Lift the black King off the board briefly. The computer now plays white and you only have to make the move for the unit.
 - Now lift the white King off the board briefly. This will prompt the computer to calculate a move for black and you will only have to make the move for the computer. And so on...

13. LCD INFORMATION

Whilst the computer is calculating the rotating display shows the current status:

- The time spent on this search so far.
- The next 3 ply the computer is anticipating so far.
- The computer's evaluation of the position.
- The current search depth.
- The number of legal moves remaining to search and the total number of legal moves.

APPENDIX

Care of your NOVAG chess computer

Dirt and dust can be removed with a soft cloth (please unplug the unit from the mains prior to cleaning). Do NOT use any chemical solvents or other fluids or expose it to rain or moisture (it is not water resistant!). In the event that the chess computer gets wet do not connect to the mains until completely dry! 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 Distributors 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 Distributors of Novag branded products determine that there is no fault with the product itself. **LIMITATION OF LIABILITY.** 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 Distributors of Novag branded products have been advised of the possibility of such damages, and limits its liability to replacement or repair of the product or part at the option of Perfect Technology Ltd. or the Distributors of Novag branded products. 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.

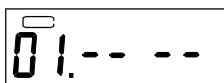
Technical Data and Features

• Program Size	56K Byte ROM (Read-Only-Memory)
• RAM:	3K Byte RAM (Random-Access- Memory)
• System Clock Speed	20 MHz
• RISC Style Processor	H8/300H
• Power Supply	50 mA max.
• Power Consumption	450 mW max.
• Adaptor	9 V dc. (Art. No. 1021)
• Opening Book	appr. 24,000 halfmoves
• Playing levels	64
• Takes Back Moves	112 halfmoves
• Solves Mate	up to Mate-in-8
• Mate Announcement	up to Mate-in-8
• Depth Search	18 halfmoves
• Elegant Wooden Board	370 x 370 x 35 mm

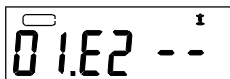
PERFECT TECHNOLOGY LTD. reserves the right to make any changes without notice.

Examples of the LCD Display

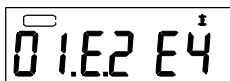
The following are examples of the most important displays of your NOVAG chess computer:



This display indicates that the computer is ready and it is your to move (White begins – indicated by white bar on left top side).



Display after input of your first half move: square where you moved FROM (white Pawn from square E2).



Display after input of the destination square that you wish to play TO (white Pawn to square E4).

01.c7c5[†]

Display of the computer's counter-move (black Pawn from C7 to C5).

00:02:27

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

b8c6[†]

INFO-Display: The computer's counter move.

c1E3[†]

INFO-Display: The computer expects this move after the previous B8 to C6.

c5b4[†]

INFO-Display: On C1 E3 this would be the computer's reply.

00.03

INFO-Display: Score for Black currently being computed.

d 05

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

39 43

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

- 00.05

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

00:08:13

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

00:09:14

INFO-Display: Shows the total time used for Black 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 chess computer resigns the game.

dr 5tl

Shows the announcement for a draw, due to stalemate.

dr 3rd

Shows a draw with 3 time repetition of the position.

dr 50

Shows a draw according to the 50 move rule.

dr ins

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

nAtE

The announcement of a checkmate.

Auto ≡

The AUTOPLAY-Function is on and the computer will start playing itself after entering GO (= lift your King off the board briefly).

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.

12. 'A1

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

bEG in

The game is set back to the original position.

End

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

LE

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

LE.t^r 10

Tournament level 10 has been selected and is now effective.

LE.A^t 11

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

LE.F^t 12

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

LE.S^d 13

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

LE.F^d 2

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

LE.Aⁿ 3

Analysis level 3 is selected and is now effective.

LE.E^A 5

Easy level 5 is selected and is now effective.

LE.b^E 4

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

LE.Fⁿ 5

Fun level 5 is selected and is now effective.

25.h4×G3⁺

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

nA^tE 1

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

FLAG

Time out.

Rules of Chess

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).

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:

The King is moved from its original square two squares toward either Rook on the same rank, and 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 colour 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".)

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 centre squares, this will give you the advantage. To do this, move your centre 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!

NOVAG®

PERFECT TECHNOLOGY LTD.
Room 406, Yu Yuet Lai Building
43-55 Wyndham Street, Central
Hong Kong

Tel: (852) 28108202

Fax: (852) 28108177

E-Mail: sales@novag.com

Web Site: <http://www.novag.com>

(For Novag representatives please refer to the Web Site: www.novag.com)

Copyright © 2006 Perfect Technology Ltd., Hong Kong.