



Quick Card

Vivid E90 / E95

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On/Off button

To switch on the unit

Press the on/off button (1) on the top left of the control panel. After initialization the default scanning screen is displayed.

To switch off the system

1. Press the on/off button(1) on the top left of the control panel. The Exit dialogue window is displayed. *NOTE: In case of total lockup of the system, hold the on/off button down a few seconds to turn the system off*
2. Select Shutdown. The shutdown process takes a few seconds and is completed when the color of the on/off button changes from green to amber. *NOTE: After switching off the system, wait at least ten seconds before turning it on again.*

Patient

Creating a new patient record

1. Press patient (2.1). If required, log on by typing the user ID and password. The Archive screen is displayed.
2. In the Archive screen select the desired dataflow.
3. Type the patient Last Name, and/or ID.
NOTE: the system can be configured to automatically generate a patient ID. When default configured, the system automatically searches to see if the patient is already in the archive. The result of this search is displayed in the Patient list. Verify that the patient to create is not already in the Patient list.
4. To create a new patient record, press New Patient. The Create new patient record window is displayed.
5. Enter additional patient information if required and press Create. The unit is ready for scanning or the Patient info and exam screen is displayed, depending on the system configuration. If the unit is configured to display the Patient info and exam screen, follow the steps below:

- a) Fill in the additional information in the Patient info and exam screen if required.
NOTE: The information displayed on screen can be adjusted from the list of available information on lower part of the screen.
- b) Press Patient or any active scanning key on the Control panel to start the examination.

Selecting an existing patient record

1. Press Patient (2.1). If required, log on by typing the user ID and password. The Archive screen is displayed.
2. In the Archive screen select the desired dataflow.
3. Type the patient Last Name, and/or ID or another query that identifies the patient. When default configured, the system automatically searches to see if the patient is already in the archive. The result of this search is displayed in the Patient list.
NOTE: The system can be configured to automatically generate a patient ID.
4. Highlight the patient record in the Patient list.
NOTE: Select the Exams tab to display a list of examinations instead of the patient records.
5. To start a new examination, press Add Exam.
NOTE: If an examination with the current date already exists you will be asked to either continue on the existing examination or create a new examination.

Ending an examination

1. Press Patient (2.1).
2. Press one of the following on the Touch panel.
 - Archive: the examination is ended and the Archive screen is displayed. Any searching criteria previously entered are remembered
 - End Exam: the examination is ended and the Archive screen is displayed ready for a new search.

Lock and brake release

Enables/Disables the movement of the Control Panel.



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Probe

1. Press the Probe button (2.2).
2. A list of the connected probes and application presets is displayed.
3. Select the desired probe application preset to start scanning.

Protocol

Press Protocol (2.3) on the Control panel and select the Protocol to run on the Touch panel.

NOTE: The Protocols displayed on the Touch panel correspond to the current exam category. To use a Protocol from another exam category, Press Category on the Touch panel and select a Protocol from a different category.

Worksheet

The worksheet function enables the user to review, edit, delete or print data independently of a report. All measurements and calculations taken during the examination can be viewed at any time using the worksheet.

Using the worksheet:

1. Press WORKSHEET (2.4) on the control panel.
2. Select the measurements type.
3. To browse the measurements, select Page Up or Page Down or adjust Page Change.

Image Review

1. In the Patient info and exam screen, highlight the examination with images to review.
2. Press Review (2.5) on the Touch panel. The stored images for the selected examination are displayed in the Review screen.

Active mode gain

Rotate (3) to adjust gain in the active mode (2D, M-Mode, Color, PW/CW, TVI).

2D Gain

When rotated clockwise (4), increases the overall gain applied to the received echo signals equally for all depth.

4D

Real time single beat 4D acquisition:

Press 4D (5.1) on the control panel to access 4D mode.

Real time multi beat 4D acquisition:

NOTE: Real time multi beat 4D acquisition is based on ECG gated acquisition of at least two sub-volumes.

1. Connect the ECG device and make sure to obtain a stable ECG trace.
2. Press 4D (5.1) on the control panel to access 4D mode.

Multi D Control

1. Press Multi D (5.2) on the control panel.
2. Press Tri-plane or Bi-plane on the Touch panel to activate the corresponding mode.
3. Adjust the angle increment between the scan planes, or the overall rotation (using the trackball).
4. To activate another scanning mode:
 - Press Color (5.7) to activate CF mode.
 - Press TVI (5.3) to activate TVI mode.

TVI

1. While in 2D mode press TVI (5.3) on the control panel.
2. Use the trackball (assigned function: Pos) to position the ROI frame over the area to be examined and to adjust the dimension of the ROI (assigned function: Size).

Up/Down

Controls the up/down movement of the Control Panel.



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PW

1. Press PW (5.4) on the control panel. A scanning screen is displayed with a Doppler cursor on the 2D mode image and a Doppler spectrum in the lower part of the screen.
2. Use the trackball to position the Doppler cursor line and the sample volume location over the area of interest.
NOTE: Sample Volume adjustment may affect the Scale, Frame rate and LV rej. settings.

2D

1. Press 2D (5.5) on the control panel to access 2D mode.
2. Optimize the image by adjusting the image controls on the touch panel.

M-Mode

1. To access M-Mode from any other scan mode, press MM (5.6) on the control panel.
2. Use the trackball (13.1) to position the cursor over the required area of the image.
3. Press Freeze (10).
4. Use the trackball to scroll through the data acquired.

Color 2D

1. From an optimized 2D image, press Color (5.7).
2. Use the trackball (13.1) (assigned function: Pos) to position the ROI frame over the area to be examined.
3. Press Set. The instruction Size should be highlighted in the trackball status bar.
NOTE: If the trackball control Pointer is selected, press Trackball to be able to select between Position and Size controls.
Use the trackball to adjust the dimension of the ROI.

Color M-Mode

1. From M-Mode press Color (5.7).
2. Use the trackball (assigned function: Pos) to position the color area in the M-Mode display.
3. Press Select. The instruction Size should be highlighted in the trackball status bar.
NOTE: If the trackball control Pointer is selected, press Trackball to be able to select between Position and Size controls.
Use the trackball to adjust the dimension of the color area.

CW

1. Press CW (5.8). A scanning screen is displayed with a Doppler cursor on the 2D mode image and a Doppler spectrum in the lower part of the screen.
2. Use the trackball (13.1) to position the Doppler cursor line over the area of interest.

Depth

Rotating the depth knob (7) sets the maximum (far field) distance that will be imaged. Decreasing the depth may allow higher frame rates.

Layout

Toggles the display between different screen layouts.

Pointer

The pointer is easily activated by pressing the pointer button (8.2).
The pointer can be used to activate screen elements (e.g. clicking on images, options).



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Zoom

Display zoom

1. Rotate the Zoom knob clockwise (6). The resulting magnified image appears in the acquisition window. An un-magnified image is displayed in the right corner showing the outlined zoomed region.
2. Use the trackball (13.1) to position the zoom area over the desired portion of the image.
3. To turn off the Display zoom, rotate the Zoom knob counter clockwise.

High Resolution zoom

1. Press the Zoom knob (6).
2. Use the trackball (13.1) to position the zoom area over the desired portion of the image.
3. Increase size as desired by turning the Zoom knob clockwise.
4. Press Zoom one more time to turn off the HR zoom.

Left arrow

Stress echo:

Press "left arrow" (8.3) to scroll backwards.

Bi-plane mode:

Switch between active planes, the plane with yellow frame is the active one.

Right arrow

Stress echo:

Press "right arrow" (8.4) to scroll forward.

Bi-plane mode:

Switch between active planes, the plane with yellow frame is the active one.

Print and secondary capture

Buttons can be configured to perform alternative storage (i.e. storage to DICOM media or secondary capture).

Clear

Multi-plane mode:

Resets all scan planes to the default position.

4D Mode:

Sets the cut-planes and crop planes to the default position.

Text

1. Press Text (8.6) on the touch panel
NOTE: You may need to press More first on the Touch panel to have access to the Text button. The Text folder with annotations specific to the current application is displayed on the Touch panel.
NOTE: To select annotations from another application, press the button under the label "Library..." and select the desired application library.
2. On the Touch panel, press the pre-defined text to insert. The word is displayed on the screen.
NOTE: Some buttons toggle between two or three related annotation texts (e.g. pressing the annotation Left will insert the text "Left" and toggle the button to the annotation Right).

To type in free text:

1. Type the desired text using the alphanumeric keyboard. To change/add line press Enter.
2. Trackball the text entered to the insertion position.
3. Press Select to add the annotation.

Touch Panel with adjustment rotaries

Touch to select on the touch panel (16). Rotaries can be rotated or pressed to adjust parameters.



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Record/ P1/ P2

To print an image:

Press P1, P2 (9.3) or Record on the Control panel.

Record/P1/P2 button configuration:

1. Press Utility/Config on the Touch panel.
2. Select the Connectivity category and Additional outputs subgroup.
3. In Button field select P1, P2 or Record.
4. Select an output device in the Available output field and press the Right arrow button to assign the device to the selected button. The Properties window for the selected device is displayed, if configurable.
5. Adjust the device specific parameters and select OK.
6. Adjust the image specific parameters (format, image compression, quality, Image frame, capture area).

Freeze & 2D Freeze

1. Press Freeze (10).
The left and right markers are displayed on either side of the last detected heart cycle on the ECG trace.
2. Press 2D (10).
The selected heart beat is played back.
3. Press 2D to freeze the cineloop.
4. Use the trackball to scroll through the acquisition and find the sequence of interest.
5. Adjust Cycle select to move from heart beat to heart beat and select the heart cycle of interest.
6. Adjust Num cycles to select the number of heart beats to play back.
7. In Freeze, press Set left or Set right to set the corresponding cineloop boundary to the current frame.
8. Adjust Left marker and Right marker to trim or expand the cineloop boundaries.
9. Press 2D to run the cineloop and Store to store the cineloop or Freeze to return to live scanning.

NOTE: Cineloop storage can be configured to store heart cycles with additional time before and after the R-wave and to display a preview before storage ('Global imaging settings').

Measure

Press Measure (11.1) on the control panel.

The Measurement menu is displayed, showing the measurement category for the current application.

To change Measurement category:

Select the heading in the Measurement menu and choose another category.

NOTE: This can also be done from the Touch panel.

To perform measurements from a study:

1. Select the study (folder) in the Measurement menu. *NOTE: This can also be done from the Touch panel.*
2. Perform the measurement. Follow the instructions displayed on screen

Caliper

1. Press Caliper (11.2) on the Control panel and select the desired measurement tool.
2. Perform the measurement. Follow the instructions displayed on screen.

Cursor

1. Press Cursor (12.1) on the control panel. A cursor line is displayed on the image.
2. Select the cursor type on the Touch panel.
3. With the trackball (13.1) adjust the position of the cursor line.

Angle

2D Mode:

Rotate the scan plane to pre-defined angles.

4D-Mode acquisition:

Display different rendering views.

4D Mode:

Sets the cut-planes and crop planes to pre-defined positions.

Multi-plane mode:

Toggles the position of scan plane 2 between the default position and a pre-defined angle relatively to scan plane 1.



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Image Store

Storing an image (default):

1. While scanning in any mode, press Freeze (10).
2. With the trackball, scroll through the cineloop and select the required image.
3. Press Image Store (11.3).

Storing a cineloop:

1. While scanning, press Image Store (11.3).
2. If desired, select and adjust the cineloop to store using the cineloop controls on the touch panel.
3. Press Image Store (11.3) to save the cineloop.

NOTE: The system can be configured to perform either:

- *Retrospective storage: while scanning press Store to store the last elapsed defined number of cycles/seconds.*
- *Prospective storage: while scanning press Store to start storage of the forthcoming defined number of cycles/ seconds.*

The user can also configure the system to preview the cineloop before storage or save the cineloop directly.

To configure the cineloop storage go to 'Global imaging settings'.

Auto

To turn on/off The Auto Tissue setting (Soft or Sharp) press Auto on the Control panel.

NOTE: The last used setting is applied. The Auto Tissue setting is preserved when switching to 2D duplex mode. The Auto Tissue settings are only available in live scanning and cannot be turned off when the image is stored.

Two settings are available:

- **Soft:** optimizes the radial and lateral uniformity and brightness of the tissue continuously in real-time.
- **Sharp:** further enhances the image display by optimizing the gray scale curve.

Trackball and related buttons

Toggles between the functions or moves the pointer.

Select keys (13.2):

Performs the selected control or highlighted menu item.

1. **Angle:** Sets the cut-planes and crop planes to pre-defined positions.
2. **Pos:** Adjusts the ROI position.

Trackball Key (13.3):

Functional groups:

1. **Scroll:** scroll through the progress bar to watch the cine loop frame by frame.
2. **Angle/Pos.**
3. **Ptr:** mouse left key.

Update/Menu Key (13.4):

In Freeze: displays a pop-up System menu.

In Live duplex mode (Doppler or M-mode): toggles Live/Freeze between the 2D image and the spectrum image.

Upper key (13.5):

Configurable as either a select key, a pointer, an Image store button, or an Image cursor.

To set the function:

1. Press Utility/Config on the Touch panel.
2. Select Imaging/Global.

TGC sliders

The sliders nearest the operator (14) affect the far field.

TGC amplifies returning signals to correct for the attenuation caused by tissue at increasing depths.

Loudspeaker volume control

Rotate (15) to adjust the volume level of the integrated speakers.

Imagination at work

www.gehealthcare.com. Product may not be available in all countries and regions. Contact a GE Healthcare Representative for more information

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