PART
B

MR system components

Super-conducting magnet

Magnetic field

The super-conducting magnet generates a strong homogeneous magnetic field with a field strength of 3.0 T.

Cooling system

The magnet is filled with liquid helium as a coolant. Following installation, it is adjusted to the desired operating field strength. The ramped-up magnet does not require additional electric power to maintain the magnetic field. However, since the liquid helium boils off slowly, it has to be refilled by Siemens Service about every 10 years.

Shielding

To minimize the effects of the magnetic fringe field on the environment, the magnet of the MR system is equipped with active super-conducting shielding.

To prevent feedback from external magnetizable objects, the MR system magnet is also equipped with the super-conducting E.I.S. (External Interference Shield) system. These super-conducting shield coils are automatically discharged once a day. Regular discharge ensures consistently high image quality.

Gradient system

The gradient system provides for precisely localized slice positions.

MAGNETOM Trio a Tim System is equipped with a whole-body TQ-engine gradient system ($\rightarrow$ Page L.1-3 *Whole-body gradient system TQ-engine*).

Body coil

Uses

The main function of the body coil is to generate a homogeneous RF magnetic field for the excitation of the nuclear spins.

As a receiver coil for MR signals, the body coil is used only for survey measurements because its signal-to-noise ratio is significantly lower than that of local coils located close to the body.

Structure

The body coil is the innermost shell of the three field-generating components: magnet, gradient coil and RF transmitter coil. It is permanently installed in the magnet.

The support tube of the body coil functions as the inside lining of the magnet bore. It has guide rails for the patient table and, together with other components, is responsible for attenuating noise.

Functionality

The body coil functions as a transmitter coil during all measurements. Exception: when using local transceiver coils.

As a transmitter coil, the body coil (aided by resonant current loops) produces an alternating magnetic field. The frequency of this magnetic field corresponds to the operating frequency of the MR system. The strength of the magnetic field is selected so that the nuclear spins are deflected according to the requirements of the selected MR measurement.

The body coil is detuned for receiving. As a result, the body signals are optimally received by all other transceiver coils without interference from the body coil.

RF-cushion

The RF-cushion is used for abdominal MR studies using T2-weighted studies (TSE and HASTE). The cushion is to improve the homogeneity of the signal for slim patients.

The RF cushion can be used both with the Body Coil and the Body Matrix (→ Page G.5-31 *Positioning the first Body Matrix with the RF cushion (optional)*).

Position the RF cushion with the desired side on the body region to be examined, e.g. on the abdomen.

CHAPTER B.2

RF coils (some are optional)

RF coils are divided into two categories: Transmitter/receiver coils (TxRx) and pure receiver coils.

When the RF coil is used as a receiver coil only, the RF pulse is transmitted by another RF coil that usually acquires a larger area (e. g. the body coil). The signal-to-noise ratio improves the closer the RF coil is located to the area under examination. This explains why small RF coils have a better signal-to-noise ratio than, e.g. the body coil. They do, however, have a smaller measurement field.

Matrix coils

The following RF coils are Matrix coils. They are strictly receiver coils:

❏ Spine Matrix

❏ Head Matrix

❏ Neck Matrix

❏ Body Matrix

The Matrix concept Tim (Total imaging matrix) follows an expanded Array concept. Using Tim, you are able to perform examinations with an FOV as large as 181 cm at a high signal-to-noise ratio without repositioning the patient. The prerequisites for this level of performance are Matrix coils used in combination with independent RF receive channels.

Matrix coils consist of Array coils where several coil elements are combined into groups (clusters and rings).

The image quality of the MR measurement is determined by the number of coil elements as well as the number of RF receive channels.

Depending on the number of maximum coil elements and independent RF receive channels, two Tim systems implemented in two MR system types are differentiated:

❏ Tim [102 x 18]

❏ Tim [102 x 32]

The first number in square brackets refers to the number of max. readable coil elements, the second number refers to the max. number of receive channels.

The following matrix modes can be selected prior to a measurement:

❏ CP mode (circularly polarized):

   The CP mode is optimized for maximum signal-to-noise ratio and works with one RF receive channel per cluster.

   Example: In the CP mode, the Head Matrix coil functions like an Array coil with four CP elements.

❏ Dual mode:

The Dual mode includes additional information to increase the signal-to-noise ratio along the image margins of MR images and/or to obtain a PAT factor of up to 2. Two RF receive channels per cluster are used in the Dual mode.

Example: In the Dual mode, the Head Matrix coil functions like an Array coil with eight CP elements.

❏ Triple mode:

The Triple mode includes additional information to increase the signal-to-noise ratio along the image margins of MR images and/or to obtain a PAT factor of up to 3. In the Triple mode, three RF receive channels are used per cluster.

Example: In the Triple mode, the Head Matrix coil functions like an Array coil with twelve CP elements.

Array coils

The following RF coils are Array coils. They are strictly receiver coils:

❏   Shoulder Array

❏   Breast Array

An Array coil consists of a combination of several small surface coil elements that include a separate receive channel each. The surface coil elements may be selected and combined according to the requirements of the examination at hand. The MR images of the individual coil elements are combined into one image.

As a result, a larger FOV can be imaged at the same measurement time while utilizing the high signal-to-noise ratio of the individual coil elements.

Transceiver coils

The following coils are transceiver coils:

❏ TxRx_Head

❏ CP Wrist

❏ CP Extremity

❏ 8-channel Knee

❏ Body coil

The body coil is permanently installed inside the magnet.

CHAPTER
B.3

Electronics cabinets

The electronics cabinets are installed in the electronics room. If there is no electronics room, the electronics cabinets are located in the control room.

Electronics cabinets

(1) Gradient cabinet
(2) Control cabinet
(3) System separator

Gradient cabinet

The gradient cabinet contains the power electronics for generating the magnetic field gradients.

Control cabinet

The electronics cabinet contains the electronics for

❏ Measurement sequence control

❏ Radio frequency generation

❏ Shim current generation

❏ Voltage supply for network

The control cabinet includes a sequence-programmable, optical trigger signal output which can be made externally accessible by Siemens Service via installation of a fiber optic cable.

!   Please note that Siemens provides the optical trigger signal
output to customers for research purposes only. No devices
connected to this output have been tested by Siemens. Before
connecting devices to the MR suite using the optical trigger sig-
nal output, they have to be tested for safety by trained person-
nel.

Before using devices in the proximity of the magnet, their
non-magnetic properties and clinical operation in the magnetic
field have to be confirmed.

The use of devices connected to the optical trigger signal output
have to comply with any applicable governmental or local hos-
pital safety and Institutional Review Boards (IRBs) require-
ments.

Siemens will not be held responsible for the use of any device
and resulting consequences in connection with the optical trig-
ger signal output.

System separator

The system separator shunts water from the ring water system used for cooling the system components.

If an external cooling system is used, a helium cooler and an interface panel are installed instead of the system separator.

MR console

Overview

Control room

(1) Window to examination room
(2) MR console

The following functions of the MR system are controlled and supervised at the MR console (MRC):

❏   Patient registration

❏   MR imaging

❏   Image reconstruction

❏   Image display

❏   Evaluation

❏   Documentation

The MR console is located in the control room. It includes the following components:

❏   Console table

❏   Host computer with monitor, keyboad and mouse

❏   Central processing unit (CPU) and control unit of the intercom

❗   The internationally accepted noise limits (IEC 60601-2-33, 26e) and 26g)) are maintained at the MR console.

MR satellite console (optional)

The MR satellite console allows for evaluation, documentation and post-processing of images while acquiring images at the MR console.

The MR satellite console accesses the database of the host computer.

The MR satellite console cannot be used for measurements. The MRSC is not connected to the MR scanner or the image processor.

Computer system

The computer system comprises a host and an image processor. The host computer is located in the operator's room next to the console table; the image processor is housed in the control room.

Data recording

The MR system provides the following modules for data recording:

❏   CD burner

❏   DVD drive

A printer interface (parallel port) is available as well.

Network connection

Information about network connections is displayed in the **Info...** dialog box.

Scanned MR images may be transferred to other systems or computers via the network connection. MR images from other systems or computers can also be received via the network.

Host computer

The host computer is responsible for:

❏   Patient management

❏   Image selection and storage

❏   Measurement sequence management

The host computer works together with the operating system
Windows XP® Professional and includes three hard disks.

❏   Operating system and application software

❏   Patient data

❏   MR images

Starting/stopping the host computer (→ Page C.2-1 *Starting
up and shutting down the MR system*).

Monitor

Description

The MR images and all interactive dialog boxes are displayed on a high-resolution 18" LCD color monitor.

Monitor

The monitor has already been configured for optimal perform-
ance by Siemens Service. For this reason, the keys on the side
of the monitor are locked.

The monitor is switched on or off as part of the overall MR sys-
tem.

User operating steps

CAUTION

Static and/or stationary brightness errors on the LCD monitor!

Incorrect diagnosis

✧ Change the image to ensure that the MR image does not
show differences in brightness, spots, or cloudiness.

✧ Check bright objects for afterglow.

✧ View the LCD monitor only when it is centered and in ver-
tical position.

!

Do not touch the surface of the screen using sharp, pointed objects.

Do not position containers holding fluids, e.g. cups or glasses, on top of the monitor.

Do not open the monitor under any circumstances.

Switching on the monitor   The monitor is switched on or off as part of the entire system.

✧ Always keep the monitor switched on.

Keyboard

Description

The MR system is equipped with an original Siemens keyboard. The numerical keys are replaced by symbol keys. This keyboard is a modified Windows keyboard where the numeric keys have been replaced with symbol keys.

Overview of the original Siemens keyboard

(1)   Function keys
(2)   Typewriter keys
(3)   Cursor keys
(4)   Symbol keys

Function keys

The **F4**, **F5**, **F6**, **F7**, and **F8** function keys enable you to access the individual task cards.

The **F1** function key lets you access the help topics.

Typewriter keys

These keys are used to enter text and data.

Cursor keys

The four arrow keys move the cursor in the text input field.

Symbol keys

The symbol keys are used to access frequently used functions.

Function	Original Siemens key	Windows key
Increase image brightness (set window position)		**NUM**
Decrease image brightness (set window position)		**/**
Increase contrast (decrease window width)		*****
Decrease contrast (increase window width)		**-**
Automatically set contrast and brightness		**9**
Previous examination		**7**
Next examination		**8**

Function	Original Siemens key	Windows key
Previous series		**4**
Next series		**5**
Previous image		**1**
Next image		**2**
Open patient registration		**Ins**
Open patient browser		**Del**
Copy to film sheet		**Enter**
Highlight		**3**

Function	Original Siemens key	Windows key
To send to node 1[1]		**+**

1   If the computer system is connected to a clinic-wide processor network (HIS/RIS), use the **Examination** task card to send images to other network addresses via node 1.

Key combinations

The following functions can be accessed in combination with the **Alt** or **Ctrl** key:

Function	Key combination
Close active window	**Alt + F4**
Switch active task card. Browse through cards.	**Ctrl + TAB**
Copy	**Ctrl + C**
Cut	**Ctrl + X**
Paste	**Ctrl + V**
Saving	**Ctrl + S**
Import data	**Ctrl + I**
Save window values	**Ctrl + W**

Operation

The following is a brief summary of keyboard operating functions.

✧ If you are not familiar with keyboard operations, refer to "Basics for Beginners" in the software manual   (→ *syngo* MR Operator Manual).

Accessing/executing functions

You can use symbol keys and key combinations to execute frequently used functions more quickly than with the mouse.

Assignment of symbol keys (→ Page B.4-11 *Symbol keys*) and frequently used key combinations (→ Page B.4-13 *Key combinations*).

Executing functions using symbol keys

✧ Press the symbol key assigned to the selected function.

Executing functions using key combinations

✧ Press the key combination assigned to the selected function, e.g. **Ctrl + S** for storing.

— or —

✧ Press **Alt +** to get to the underlined letters of the selected menu item.

Entering and deleting data

Entering data

♦ Activate the desired input area.

♦ Enter text and values using the keyboard keys.

Deleting data

♦ Deleting characters to the left of the cursor: Press the **Backspace** key.

♦ Deleting characters to the right of the cursor or deleting highlighted text: Press the **Del** key.

Mouse

Description

The MR system is equipped with a three-button mouse. The mouse is connected directly to the computer.

Mouse

(1)   Mouse buttons

The mouse provides the following functions:

❏   Left mouse button:

   ❏   Selecting or moving objects

   ❏   Starting applications

   ❏   Executing commands

❏   Center mouse button:

   Changing the window values of patient images

❏   Right mouse button:

   Opening function menus (depending on the position of the mouse pointer)

Operation

✧   If you are not familiar with keyboard operations, refer to
    "Basics for Beginners" in the software manual   (→ *syngo*
    MR Operator Manual).

In-Room MRC (option)

Description

The In-Room MRC is an additional operating console in the examination room. It is used for image viewing and MR system operation. The In-Room MRC facilitates the examination process by allowing the operating personnel to remain inside the examination room between procedures.

Uses

The In-Room MRC is used for the following purposes:

❏ Display for MR-guided procedures

❏ Quickly adjusting patient positioning for survey measurements

❏ Immediately starting the measurement after administering contrast medium

The constant presence of operating personnel inside the examination room allows uninterrupted patient care and quick intervention in case of complications.

! The In-Room MRC is not designed for diagnostic purposes.

In-Room MRC

(1) LCD monitor
(2) Tray with trackball and keys

The In-Room MRC is located in the examination room.

Tray with trackball and keys

(1) Keys
(2) Trackball
(3) Operating panel
(4) Handle to move the In-Room MRC
(5) Bezel

The pointer is moved across the surface of the program by rolling the trackball.

The keys have the following functions:

❏ Left key:
   ❏ Selecting or moving objects
   ❏ Starting applications
   ❏ Executing commands

❏ Center key:

   Changing the window values of patient images

❏ Right key:

   Opening the context menu

Operation

The In-Room MRC is operated via trackball and three keys. The same software functions as those on the MR operating console are available.

The monitor height and tilt can be adjusted for easy and comfortable operation.

WARNING

Diagnosis on the In-Room MRC!

Incorrect diagnosis

✧   Do not use the In-Room MRC for diagnostic purposes.

CAUTION

Cable/hoses of interventional components!

Injury to patient and operating personnel

✧   Route cables/hoses of interventional components so that it is not possible to trip over them.

Adjusting the monitor height

Set wheel to adjust the height in back of the In-Room MRC

(1)   Set wheel

✧   Turn the wheel clockwise to raise the monitor

✧   Turn the wheel counter-clockwise to lower the monitor

Adjusting the monitor tilt

Stop lever in back of the monitor

(1) Stop lever

✧ Release the locking lever by turning it counter-clockwise by 90°.

✧ Press lightly against the upper (or lower) edge of the display to move the monitor into the desired tilt position.

Control unit

The control unit provides the following functions:

❏   Controlling the patient table movement

❏   Starting/stopping the measurement

❏   Adjusting the playback volume for the headphones

❏   Adjusting the playback volume for the room speaker

❏   Adjusting the tunnel lighting

❏   Adjusting the tunnel ventilation

❏   Switching the laser light localizer on/off

The control units are located on the right and left side of the patient table on the front side of the magnet cover.

!   An optional secondary control unit may be mounted in back of the magnet. For safety reasons, the secondary control unit does not support table lift operation (vertical movement).

Magnet with patient table

(1)   Control unit on the left side of the patient table
(2)   Control unit on the right side of the patient table

Control Unit

Right control unit

(1) **Table Movement Up/Inward** button
(2) **Laser Light Localizer** button
(3) **Speed** button
(4) **Table Stop** button
(5) Table display
(6) Toggle key **Tunnel lighting**
(7) Toggle key **Tunnel ventilation**
(8) Toggle key **Headphones – music volume**
(9) Toggle key **Room – music volume**

(10) **Home** button

(11) **Start/Stop Measurement** button

(12) Intended for future use.

(13) **Table Movement Down/Outward** button

(14) **Center Position** button

All buttons and toggle keys have a luminous ring.

Patient table displays

The table displays show the status of the functions executed via the control units.

Magnet with patient table

(1)   Table displays on the front cover of the magnet

They are located on the right and left side of the patient table on the front side of the magnet cover. An optional second display can be installed in back of the magnet in connection with a third control unit.

Table display

(1) Text output line
(2) Table position (+/-)
(3) Direction arrows for table movement
(4) Combined arrows (vertical, horizontal)
(5) Collisions when moving the table in the vertical direction
(6) Direction arrows for table movement
(7) Intended for future use.
(8) Intended for future use.
(9) Overheating brake
(10) Patient on table
(11) For service only
(12) Coil socket assignments

The table display provides the following information:

❏ Coil socket assignments

❏ Relative position of the tabletop

❏ Current tabletop movement

❏ Status messages tunnel lighting, tunnel ventilation, in-room and headphone volume

❏ Collisions when moving the table in the vertical direction

Text output line

The text output line of the table display shows the following information:

❏ Brightness of tunnel lighting, fan for tunnel ventilation, volume of intercom and headphones

❏ Name of the last connected coil (displays briefly after establishing the connection)

❏ Error indications

❏ Help text for service purposes

❏ Output following Start: **MAGNETOM**

Coil socket assignments

The current coil socket assignments are indicated by the corresponding icons on the table display. The following assignment applies:

Display symbol: Display of coil plug-in fields

(1) Coil plug-in field A
(2) Coil plug-in field B
(3) Coil plug-in field C
(4) Coil plug-in field D

After coil connection, the coil name appears briefly in the text output line.

Blinking icons indicate coil malfunctions.

Relative position of the tabletop

The relative position of the tabletop (→ Page D.1-3 *Patient table positions*) is shown in mm.

! **0000 mm** on the display indicates that the slice to be measured is positioned in the magnet isocenter (center position). This is a prerequisite for obtaining optimal image quality.

Laser light localizer

The laser light localizer on the magnet facilitates correct patient positioning.

To select the region to be measured on the patient's body, crosshairs are projected on his body via a laser located outside the magnet bore.

After pressing the **Center Position** button, the patient table automatically moves the patient into the magnet bore until the body region marked is located in the magnet isocenter of the MR system.

Laser light localizer

(1)   Laser light localizer

Alarm box

Description

The alarm box has the following functions:

❏ Displays monitoring and alarm signals

❏ Switches the MR system on and off

The alarm box is installed near the MRC.

Alarm box

Checks

Alarm box

(1) **LINE POWER** LED
(2) **HELIUM LEVEL** LED
(3) **MAG STOP** LED
(4) Without any function
(5) **COMPRESSOR** LED
(6) **BATTERY LOW** LED
(7) **EIS** LED
(8) **COMMS FAULT** LED
(9) **ACKNOWLEDGE** button
(10) **Magnet Stop** switch

⚠

WARNING

MR system malfunction!

Hazardous conditions for patients

✧   Please note the sounding alarm and signal.

✧   Do not perform MR examinations.

✧   Notify Siemens Service.

Check LEDs   The LEDs indicate alarm messages.

LED	LEDs light up to indicate:
LINE POWER	Power supply of the MR system is satisfactory
HELIUM LEVEL	Helium fill level is too low
MAG STOP	**Magnet Stop** switch is pressed / quench triggered or: Error in the Magnet stop circuit
COMPRESSOR	Error in the compressor
BATTERY LOW	Battery for magnet supervision is getting weaker
EIS	Error when resetting EIS
COMMS FAULT	Communication error

✧ Check the following LEDs for alarm indications: **HELIUM LEVEL**, **MAG STOP**, **COMPRESSOR**, **BATTERY LOW**, **EIS** and **COMMS FAULT** . An alarm is indicated when an LED lights up and an alarm sounds.

✧ In case of an alarm, press the **ACKNOWLEDGE** button to silence the alarm, and notify Siemens Service.

✧ Check to verify that the **LINE POWER** LED is glowing.

✧ If the **LINE POWER** LED is not on: Check the power supply of the MR system.

The **LINE POWER** LED is off, although the power supply is functioning properly?

✧ Notify Siemens Service.

After a power failure, the battery powers the magnet monitoring system for another 14 days. During this time, the magnet can still be quenched, i.e., the magnet can be ramped down by pressing the **Magnet Stop** switch in case of emergency.

Remote monitoring

After installing remote monitoring (floating alarm contact X119), the following error messages can be output centrally (e.g. the front door):

❏ Helium fill level is too low

❏ **Magnet Stop** switch is pressed / quench triggered

or:

Error in the Magnet stop circuit

❏ Battery for magnet supervision is getting weaker

❏ Error in the compressor

❏ Communications error

✧ Please contact Siemens Service regarding questions about remote monitoring.

Intercom

Description

The intercom allows personnel and patients to communicate during the examination.

In addition, the personnel can play music or automatic voice outputs for the patient.

The intercom consists of the following components:

❏   The central unit located in back of the MR console

❏   Loudspeakers, headphones, microphone and volume control in the examination room

❏   Control unit on the MR console

Operating components of intercom

Operation

The intercom is used for the following purposes:

❏   Listening to announcements made by the patient

❏   Transmitting live announcements to the examination room

❏   Transmitting automatic voice output to the examination room

❏   Playing music inside the examination room

❏   Stopping the patient table movement

❏   Stopping the measurement sequence

❏   Acknowledging the patient call

❏   Listening to physiological monitoring signals

Intercom operation is partially software-based. All relevant information is included in the instructions below. The software operation is described in detail in the ($\rightarrow$ *syngo* MR Operator Manual).

Operating components of intercom

(1) **Patient instructions** volume control
(2) **Listen mode** volume control
(3) **CV/CBT** switch
(4) **Trigger signal** volume control
(5) **Table Stop** button
(6) Microphone
(7) **Listen** LED
(8) **Listen** button
(9) **Music On** LED
(10) **Play Music** button
(11) **Squeeze bulb/announcement active** LED
(12) **Speak** button
(13) Speakers

CAUTION

Incorrect monitoring due to switched-off intercom!

Risk of injury to patient because emergencies cannot be communicated

✧ Keep the Listen mode continuously enabled at the intercom.

Listening to announcements made by the patient

✧ Press the **Listen** button.

The **Listen** LED lights up.

Patient announcements and sounds from the examination room are transmitted to the control room (Listen mode).

✧ Set the volume at the **Listen** volume control at the control unit of the intercom.

✧ Press the **Listen** button again to end the transmission.

The **Listen** LED goes out.

Transmitting live announcements to the examination room

✧ Set the volume at the amplifier regulator **Patient Instructions** at the control unit of the intercom.

✧ Press and hold the **Speak** button.

The **Squeeze bulb/announcement active** LED lights up.

Music and automatic voice output are interrupted.

✧ Speak into the microphone from a distance of approx. 30 to 40 cm.

The patient can hear the announcement via the headphones and the speaker.

✧ Release the button to end the transmission.

Transmitting automatic voice output to the examination room

Set the upper volume limit

The upper volume limit is set via software. Set once, the upper limit is not changed for every examination; it is changed as per requirement.

- ✓ The **Play music** button is switched off, the **Music on** LED is off.

- ✧ Set the **CV/CBT** switch to **CV**.

- ✧ Set the **Patient Instructions volume control** to max. volume at the control unit.

- ✧ Start automatic voice output using the software (→ *syngo* MR Operator Manual).

- ✧ Increase the volume in the software to a level until you reach the desired upper limit volume in the examination room.

- ✧ Decrease the final volume of headset and loudspeaker to the desired level using the **Patient Instructions** volume control at the operating unit of the intercom (→ Page E.1-3 *Set the volume for the music, the tunnel lighting as well as the ventilation*).

Start automatic voice ouput

✓ The upper volume limit is set.

✓ The **Play music** button is switched off, the **Music on** LED is off.

✧ Set the **CV/CBT** switch to **CV**.

✧ Start automatic voice output using the software (→ *syngo* MR Operator Manual).

✧ Set the desired volume at the headset and loudspeaker using the **Patient Instructions** volume control at the control console (→ Page E.1-3 *Set the volume for the music, the tunnel lighting as well as the ventilation*).

Playing music inside the examination room

To play music in the examinaton room, an e.g. CD player or walkman is connected to the central unit of the intercom.

Connecting the audio equipment

The connections for the audio equipment are located at the central unit of the intercom in back of the MR console.

Connections at the central unit of the intercom

(1) **X10** (input, physiological monitoring signals)
(2) **Music in** (audio device connection)
(3) **CV in** (input for automatic voice output)
(4) **Mic out** (voice output to PC)
(5) **Line out** (output, active loudspeaker)

✧ Connect a suitable cable to the **Music in** connection of the central unit for the intercom and at the output of the head-set or at the **Line Out** output of the audio equipment, e.g. a CD player or a walkman.

Set the upper limit for the volume

The upper volume limit is set at the audio equipment. Once set, changes are made to the audio equipment upon request only.

✧ Go to the control unit at the magnet and set the volume control for the headphones and the loudspeaker to the maximum volume possible.

✧ Increase the volume at the audio device until the upper limit volume is set in the examination room.

✧ Reduce the final volume of the headset and the loud-speaker to the desired value using the volume regulators at the control unit(→ Page E.1-3 *Set the volume for the music, the tunnel lighting as well as the ventilation*).

Start to play the music   ✓   The upper volume limit is set.

✧   Press the **Play Music** button.

The **Music On** LED lights up.

✧   Start the music at the audio device.

The music plays through the patient's headphones or the speaker inside the examination room.

If the **Listen** button is not pressed, the music is transmitted to the operator's room as well.

If additional active speakers are connected to the **Line Out** jack, the music is also played back via the loudspeakers.

✧   Set the desired volume at the headset and loudspeaker using the volume regulators at the control unit on the magnet ($\rightarrow$ Page E.1-3 *Set the volume for the music, the tunnel lighting as well as the ventilation*).

✧   Set the **CV/CBT** switch to **CBT** to disable the music inside the examination room.

— or —

✧   Go to the control unit and turn the volume control fully to the left (counter-clockwise).

Stopping the patient table movement

✧ Press the **Table Stop** button.

The table movement is stopped immediately.

Terminating the measurement sequence

✧ Press the **Table Stop** button twice.

The measurement is terminated.

Acknowledging the patient alert

✓ The patient alert is activated. An acoustic signal sounds at
   the intercom. The **Squeeze bulb/anouncement active**
   LED flashes.

✧ Press the **Speak** button.

The signal stops sounding. The patient alert is switched off. The
transmission from the examination room is activated. It is now
possible to speak with the patient.

Listening to physiological monitoring signals

The operating personnel may use the intercom to listen to the trigger pulses of the physiological monitoring signals.

The volume of the trigger pulses can be set to three different levels:

❏   Low

❏   Medium

❏   High

✧   Use the appropriate volume control to set the trigger pulse volume.

The trigger pulses are transmitted at the desired volume.