STEINWAY LYNGDORF

MODEL D

INSTALLATION MANUAL

VERSION 2.0

TABLE OF CONTENTS

INTRODUCTION

Please read all material carefully prior to installation. If you need additional assistance, contact your Steinway Lyngdorf representative or email service@steinwaylyngdorf.com.

COMPLIANCE

WEEE

The European Parliament and the Council of the European Union have issued the Waste Electrical and Electronic Equipment Directive. The purpose of the Directive is to prevent waste of electrical and electronic equipment and to promote reuse, recycling, and other forms of waste recovery. Steinway Lyngdorf products and the accessories packed with them are subject to the WEEE Directive. Please dispose of any waste materials in accordance with your local recycling regulations. Products and equipment which must be collected for reuse, recycling, and other forms of recovery are marked with the icon of the crossed-out waste receptacle.

FCC

Steinway Lyngdorf products and accessories comply with parts 15 and 68 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference; and (2) this device must accept any interference received, including any interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Equipment marketed to a consumer must be capable of complying with the necessary regulations in the configuration in which the equipment is marketed.

CE

INTRODUCTION TO THE MODEL D MUSIC SYSTEM

Safety Warnings

Physical Handling

The Model D components – especially the loudspeaker systems – are very heavy and large. They can be difficult to handle. Follow all instructions for unpacking and installation. Use ergonomically correct body positions. Be careful not to unbalance the large speaker systems during handling. Steinway Lyngdorf cannot be held responsible for any physical damage which occurs during the installation process.

Electrical Safety

The Model D system must be connected to the mains power system using the supplied power cables only. The mains voltage has been factory set according to your territory (115 or 230 V). The voltage setting can only be changed by an authorized technician. Use only mains power cables and power plugs approved by Steinway Lyngdorf. Otherwise you may cause damage to the electronics and infringe the warranty. Use only link cables – CAT-5E – approved by Steinway Lyngdorf. Using non-approved cables, for instance with improper shielding, represents a major risk of violating EMC and FCC rules for harmful noise radiation.

Accessories Included

In the system accessories box, located in the head unit crate, you will find a complete set of link cables for use between head unit and speakers, a measurement microphone, a microphone stand, and cable for calibration of the RoomPerfect™ system. For handling during installation, several pairs of white gloves have been included in the accessory pack.

Preparing for Cabling

Steinway Lyngdorf Model D Music System has two pieces of 10 meters (33 feet) of CAT-5E link cable and four pieces of 1.8 meter (6 feet) power cable included in the accessory pack.

Home Automation System Integration

Model D is compatible with home automation systems. The system accessory pack includes a remote interface box for wireless transmission of the control signals. The remote interface box contains a RS-232 interface with 9 pin Sub-D connector. Information about protocol etc. can be obtained from Steinway Lyngdorf.

Checking Shipping Monitors on Arrival

To ensure proper transportation, all crates have Shockwatch and Tip'N'Tell monitors that will detect any improper handling. On arrival, check these monitors. If indicators have been activated, always accept shipment, note activation on bill of lading, and inspect the crates for potential damage inside.

One of the two Model D speaker crates. The shipping monitors are located on the side as shown on the photo.

UNPACKING MODEL D MUSIC SYSTEM


Pull out the Clip-Lok opening tool by using two fingers.


Place the tool behind the clip. Use your other hand to keep the clip in place when you unlock it. Otherwise the clip may cause damage when it springs out of grip.

Carefully slide out the speaker from the opened box.

Carefully lift the speaker completely out of the box. You can now move it using the supplied levers.

Unpacking and Handling Loudspeakers

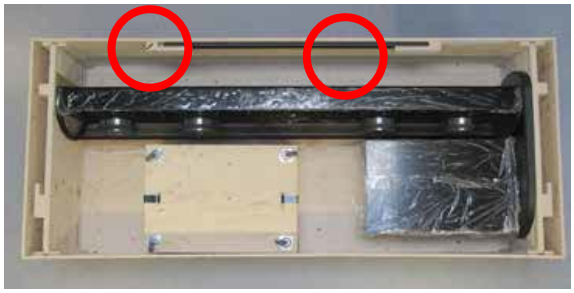
The loudspeakers weigh 176 kilos (384 lbs) each. Therefore, a minimum of four people will be necessary to unpack and install the system.

During moving and handling, do not tilt the boxes more than 90 degrees. It might be best to unpack the system outside the building in which the installation is to be made.

The crates have been assembled using the Clip-Lok packaging system. The clips must be removed with the tool supplied inside the corner of the boxes as illustrated.

⚠ WARNING: Be very careful when you unlock the clips. They are firmly fixed and may cause damage when they spring open, unless you keep the clips in place with your free hand as illustrated.

Once you have unclipped the box, remove the top. The speakers are bolted to two wooden plates equipped with handles and lifting points. In the right channel speaker box, in a small compartment on the speaker front facing wall, you will find two levers for later moving usage and an Unbraco fastener for removing the transport fittings on top and bottom of the speakers.



You will find a Hex/Allen (Unbraco) key and two steel levers inside the box. The levers are for moving the speaker when it has been unpacked. The key is for removing the transport fittings at top and bottom of the speakers.

After unclipping the top of the crate, remove the side wall as illustrated. The speakers are bolted to two wooden plates equipped with handles and lifting points. Carefully slide out the speakers and place them firmly on the ground. Using the supplied steel levers, you can now carry the loudspeaker. The levers are located in a room on top of one of the crate walls. Place them in the transport fittings as shown. Four people will now be able to move the speaker securely into the installation site. Do not remove the protective foil before final placement! Remove your watches, buckles, rings etc. before handling the lacquered system components.

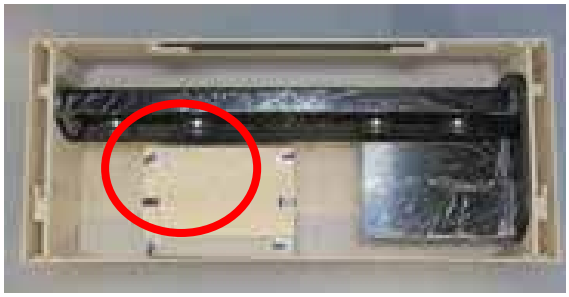
Place the steel levers into the lifting points like this.

Removing Speaker Shipping Protection

The speaker stand is extremely heavy. To avoid potential damage when removing the transport protection plate, place one of the foam protection plates from the shipping crate below the speaker stand for secure support. Use the supplied Unbraco (Hex/Allen) key to release the bolts.

Using a Dolly for Moving the Speakers

Included in the packaging is a dolly cart with four multi-directional wheels. It is placed as a lid above the amplifier module compartment in the right speaker crate. You can use the dolly for moving the speakers into and inside of the place of installation. Unlock the Clip-Lok clips following the instructions on page 8 and the dolly can be taken out of the crate.



Unpacking the Model D Head Unit

The head unit must be unpacked in the same way as the speakers. Remove the Clip-Lok clips from the top of the crate and remove the lid. Afterwards, remove the clips on the walls. You can now easily get access to the head unit and move it from the pallet.

The System Accessories Box

Inside the head unit crate is a compartment (as seen above on the photo) which contains the system accessories carton with cables, Owner's Box with Installation Manual and remote control, microphone with tripod stand for RoomPerfect™ calibration and more.

Unpacking and Charging the Remote Control

The remote control is located inside the black leather Owner's Box together with the Owner's Manual. The remote control is delivered with lithium-ion batteries only partially charged for safety reasons. The batteries must be fully charged before use.

Place the remote control on the supplied docking station located in the System Accessories box and connect the system to a wall outlet. The Steinway lyre logo on top of the remote control will blink as long as charging is going on. Depending on the remaining power level in the batteries, a full charging may require 3-4 hours.

Charge the remote control while you install the Model D Music System!

The System INSTALLATION FORM in the Manual must be SIGNED by the installer, or the factory warranty will be void.

SYSTEM PLACEMENT IN THE ROOM

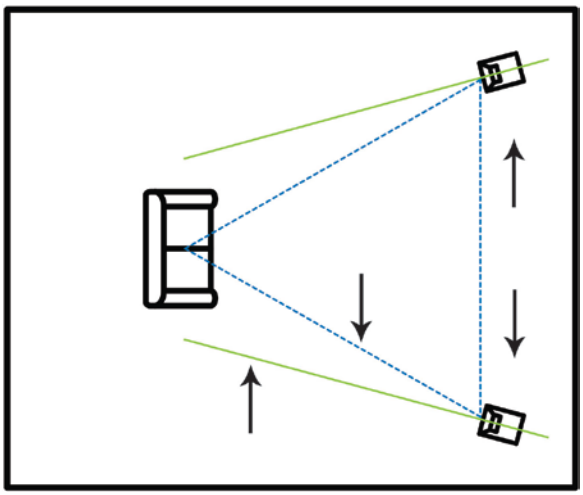
Guidelines for Room Placement

The head unit can be placed anywhere in the room, preferably within line of sight from the listening position for optimum reception of remote control RF signals. You can place the speakers according to the design of the room from a visual point of view, as long as you respect the basic stereo triangle (60x60x60 degrees) by not allowing too much space between the speakers vs. the distance from the speakers to the listening position. If a symmetrical position is impossible and the distance from each speaker to the listening position is different, then this can be compensated digitally by adjusting the delay in the Installation Menu (see Speaker Delay section). In an off-axis listening situation, you should not exceed a 0 degree position towards the nearest speaker.

Regardless of speaker positioning, the RoomPerfect™ system will always ensure that the frequency response in the listening position remains the same.

For perfect performance these recommendations must be followed:

- The speaker must be located at least 1 meter or 3.3 feet (50 cm or 1.65 feet from the rear edge of the metal base) away from rear walls.
- The speaker must be located at least 1.5 meter or 4.8 feet away from side walls.
- The speakers must be toed-in towards the primary listening position. For instance, if the speakers are positioned in a 30 degree angle as seen from the listening position, then the speakers should be toed-in 5-15 degrees depending on where the best sound is achieved.
- Both speakers should have the same amount of side reflections, i.e. symmetrical positions in the room relative to adjacent walls.
- The Model D Music System has a time delay adjustment procedure to compensate for unsymmetrical placements of the speakers compared to the listening position. See Speaker Delay section.



ASSEMBLY OF MODEL D MUSIC SYSTEM

Installation of Amplifier Modules into the Speakers

The amplifier modules are located in sealed compartments in the loudspeaker crates as illustrated. Remove the Clip-Lok clips with care as described on page 8 to avoid any damage when they are unleashed. The amplifier modules must be installed in their compartments on the speaker stands and wired prior to operation.

First, the electronics module must be inserted into the lacquered amplifier cabinet on the speaker stand. Remove the rear panel as seen above. Then remove the two M6 bolts on top of the wooden cabinet. Pull out the three speaker wires with plugs, as shown below.

The metal plugs might scratch the lacquered base! Be careful!

Carefully slide the amplifier module inside (photo below). Then fasten the top of the module to the cabinet with the two M6 bolts that you previously removed.

Cable Connections Between Amplifier Module and Loudspeaker

After assembly of the electronics box, the three speaker cables must be connected to the amplifier module as follows:

1. Midrange/Tweeter: Silver plug. This must go into the LEFT silver plated Speakon terminal.
2. Woofer minus: This must go into the CENTER Speakon terminal.
3. Woofer plus: Black plug. This goes into the RIGHT black plated Speakon terminal. If the two outer connections have been reversed, the speaker will not produce any bass and will sound very distorted.

Cover Bolt Holes on Speaker Top Panel

During transportation, a plywood plate is mounted on top of the speakers with two bolts. The removal of the plate will leave the bolt holes open on the top panel. These must be blocked with black plugs supplied in the system accessories box.

Assembly of the Active Speaker Systems

The metal plugs might scratch the lacquered base! Be careful!

Spikes or Feet for Speakers

The speakers and the head unit are designed to stand on each four spikes or feet. The system accessories box contains three mounting options.

a. 12 pieces of 28 mm high spikes for wooden floors or floors covered with ordinary carpet.
b. 12 pieces of 48 mm high spikes for floors covered by thick carpet.
c. 12 pieces of non-penetrating feet mainly for marble, granite or similar floor materials.

Spikes are the most stable option but might cause damage to the floor below; therefore, the use of spikes will be each customer's own responsibility. Steinway Lyngdorf cannot take any responsibility for any damages caused by spikes. Choose the non-penetrable feet if there are any concerns about potential harm to floors.

NOTE: The feet have rubber facing to protect the floor. Do not push or drag the speakers when they are standing on the feet, as the rubber may be ripped off and damage may occur to the floor.

Link Wiring of System

The Model D Music System is connected by a proprietary Steinway Lyngdorf link. The link cable will carry both the digital audio signal and the control signals. It is very important that only CAT-5E cables and RJ-45 connectors approved by Steinway Lyngdorf are being used. Poor quality cables and plugs represent a major risk of noise and interference problems and may even cause violation of safety and EMC regulations. The link cable from the head unit must be connected to the left RJ-45 port. If you are forming a daisy-chain of speakers use the right RJ-45 port for output to the next speaker in line.

DIP Switchboard Addressing

The DIP switchboard in the upper left corner of the interface board must be encoded in order to make it possible for the head unit to identify the speaker. As up to 16 speakers can be connected, each unit must have a specific address or ID in the network.

The DIP switchboard has eight switches. Use only DIP 1-4 for addressing. DIP switches 5-7 are not in use. Uneven numbers refer to left channel speakers, even numbers to right channel speakers.

Link Termination or Daisy-Chaining

DIP 8 must be adjusted for either termination or transmission. Switch DIP 8 to lower position if you want to connect more speakers to the network. Switch to upper ON position if there are no further speakers in the chain.

Speaker Assembly and System Link Wiring

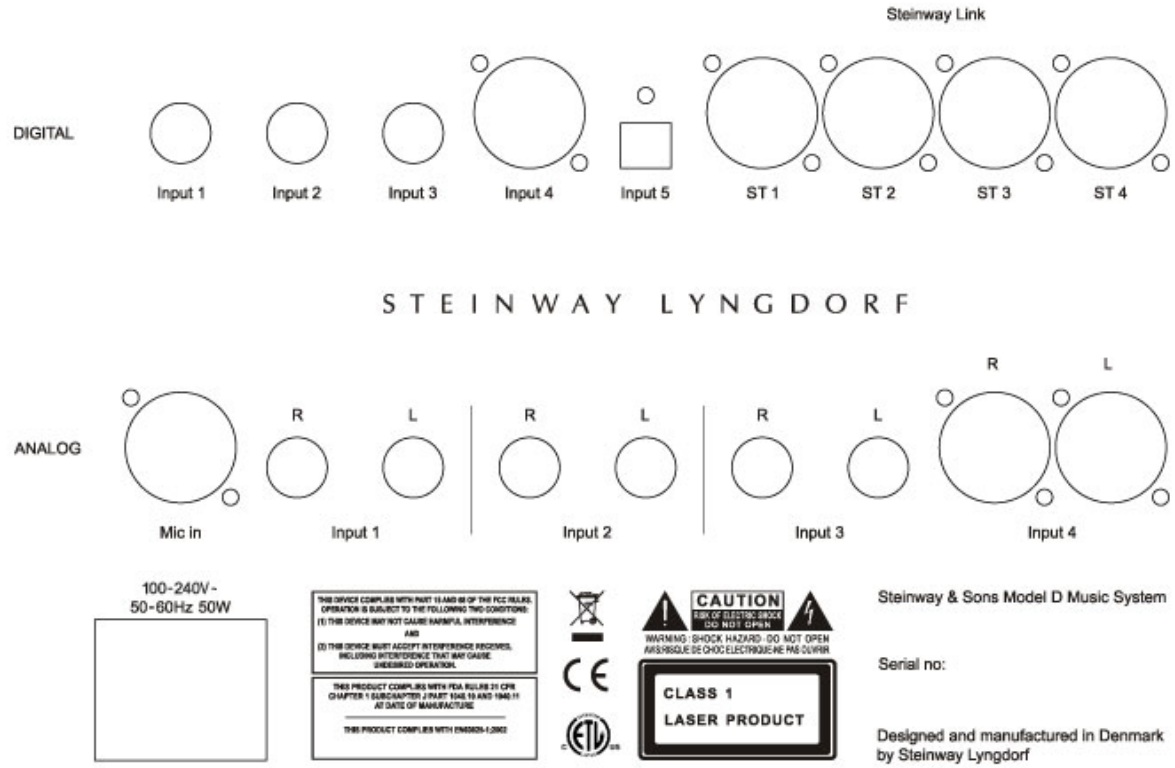
DIP SWITCH ADDRESSING (or ID) SYSTEM

Address 0 = 0000 = Speaker 1 (Left)
Address 1 = 1000 = Speaker 2 (Right)
Address 2 = 0100 = Speaker 3 (Left)
Address 3 = 1100 = Speaker 4 (Right)
Address 4 = 0010 = Speaker 5 (Left)
Address 5 = 1010 = Speaker 6 (Right)
Address 6 = 0110 = Speaker 7 (Left)
Address 7 = 1110 = Speaker 8 (Right)
Address 8 = 0001 = Speaker 9 (Left)
Address 9 = 1001 = Speaker 10 (Right)
Address 10 = 0101 = Speaker 11 (Left)
Address 11 = 1101 = Speaker 12 (Right)
Address 12 = 0011 = Speaker 13 (Left)
Address 13 = 1011 = Speaker 14 (Right)
Address 14 = 0111 = Speaker 15 (left)
Address 15 = 1111 = Speaker 16 (Right)

This is the addressing for a right channel speaker in a basic setup with two speakers. The ID is 1-0-0-0 and the link output is terminated, as switch 8 is in upper ON position.

Connecting the Head Unit

The rear panel of the head unit has an array of digital connections on top and analog connections placed below. The digital source input section offers three phono/RCA, one XLR and one optical Toslink. The four RJ-45 link cable terminals to the right are for connecting up to eight pairs of active speakers via the proprietary Steinway Lyngdorf Link System.



The analog section (as seen from the left) has an XLR microphone input for RoomPerfect™ calibration, three pairs of phono/RCA stereo inputs, and one stereo pair of balanced XLR terminals. So in total five digital and four analog sources can be connected to the head unit. Each input to be used must be activated by naming it in the Installation Menu.

Connecting the Power Cables

DO NOT power up Model D before you have read the power-up sequence that follows! When all signal connections have been properly made, you can connect the Model D to the mains power. Both the head unit and the active speakers must be mains connected with the supplied high quality cables.

The Model D head unit will switch automatically to your local voltage, whereas the speaker amplifier modules have been factory set to either 115 or 230 V. This setting can only be changed by a certified service technician.

Powering up the System

IMPORTANT!

The first power up sequence after final assembly of the system can only be performed in one way:

1. Speakers first.
2. Turn on head unit after speaker activation.

The head unit must be able to identify the speakers connected to it by the link network. This will happen automatically when the head unit is activated. Therefore, the speakers must be powered up first, so that the head unit immediately can track them. Consequently, if the head unit is powered up first, there will be no active speakers to track and you will receive an error message (-E-) in the volume display.

In case of failure and the head unit cannot identify any speakers, turn off all components and do the power-up sequence again as described above.

Connecting the Head Unit and System Mains Power

The head unit will detect and adjust to voltage, whereas the speaker amp modules are factory set to either 115 or 230 V.

USER INTERFACE MODEL D MUSIC SYSTEM

Model D Head Unit Display and User Interface

The volume control display indicates the level on a scale from 0.0 to 99.9. It also shows muting when activated and CD track information briefly when you skip or search. When RoomPerfect™ is activated the logo will be displayed. The remote control is an RF device and must be charged and installed prior to operation. Voicings are six preset tone controls that can be toggled through using the dedicated button.

Use the search wheel and the enter button to locate and select functions in the display. The menus are self explanatory. Please observe that in the Installation Manual, the ‘Enter’ button is referred to as ‘Select.’ The display shows either a User Menu or an Installation Menu. The latter is only accessible by entering a code as described in the next section.

MODEL D SOFTWARE PROGRAMMING

Finding the Installation Menu

The basic programming of the Model D Music System must be performed via the Installation Menu in the head unit display. This Installation Menu is not accessible from the ordinary User Menu. To activate it you must enter the User Menu and then input a certain code sequence using the buttons alongside the display:

1. Press the **MENU** button.
2. Hold down **INPUT** (upper left button).
3. Press and release **SKIP** back, (second right button).
4. Press and release **SKIP** forward.
5. Release the **INPUT** button.

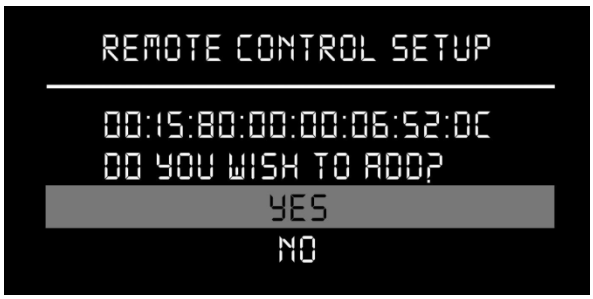
You will then gain access to the Installation Menu.

Remote Control Setup

a. Select **REMOTE CONTROL SETUP** in the Installation Menu.

b. Select **ADD REMOTE**.

c. On the remote control: Press and hold down the Voicing, Skip Left and Skip Right buttons simultaneously until the MAC address appears in the head unit display.



d. Select **YES** to add the remote to the system. Factory setting is Auto channel detection. If you experience repeated problems with interference or no connection, you can manually override the auto selection and choose another channel.

Number of Speakers

a. Select Number of Speaker in Menu and press **Enter**.

b. Select the total number of speakers you want to connect (2-16).

c. Press **Enter** to store the selection and return to the installation menu.

d. In case you want to add more speaker in the future:

1. Change the number of speakers.
2. Go to Standby mode.
3. Connect and power up the new speakers.
4. At re-activation, the head unit will detect the extra speakers.

Speaker Delay Settings

The Speaker Delay menu is used for adjusting delays in setups with more than two speakers or setups where speakers are placed asymmetrically as seen from the listening position. In a standard setup with two speakers placed symmetrically, there will be no need to change anything in the Speaker Delay menu.

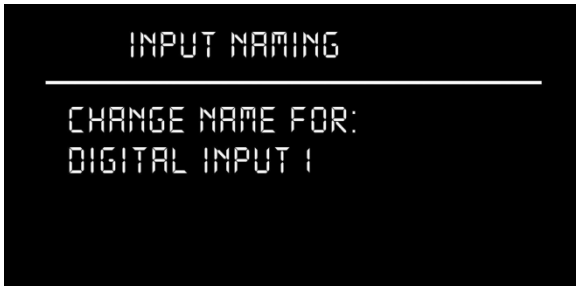
In the Speaker Delay menu, distances from all speakers to the listening position can be entered, making it possible to delay the sound accordingly. The sound from all speakers will then arrive simultaneously at the listening position. The delay time must be adjusted individually for each pair of connected speakers. First speaker pair is labelled Speaker pair 0 following binary logic. The delay can be adjusted individually for pairs labelled 0-7. Select the pair you want to program.

a. Measure the distance between each speaker and the listening position. The measuring point is the front of the speaker baffle by the tweeter unit.

b. Input the measurements in centimeter into the Speaker Delay Menu as seen above.

c. When measurements for all speakers have been entered, select the Store setup menu item.
The system will now calculate delays for all speakers, store them and return to the Installation menu.
NOTE: The system can handle a maximum difference of 13 meters/43 feet between the nearest and the furthermost speaker. If the distance exceeds 13 meters/43 feet, the system will display an error message, the data will not be stored and the system does not exit from the Speaker Delay menu.

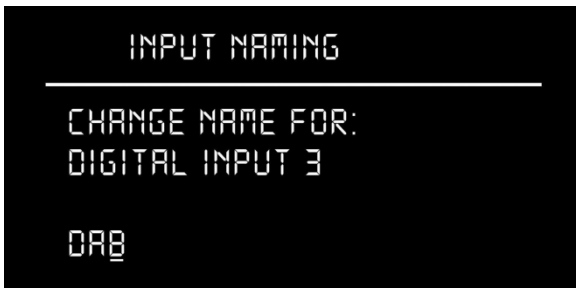
Input Naming



Up to nine external signal sources can be connected: five digital and four analog. Every input to be used must be given a name, otherwise it will not appear in the User Menu.

a. Press **ENTER** for choice of entry.

b. Spin the search wheel to search for letters and numbers.



c. When the desired character is found, press **SKIP FORWARD** to store the character and move the cursor to the next position.

d. You can move left and change a character using the **SKIP BACK** button.

e. Press **ENTER** when you have finished the name giving.

f. Use the search wheel to move to the next input and repeat the naming procedure.

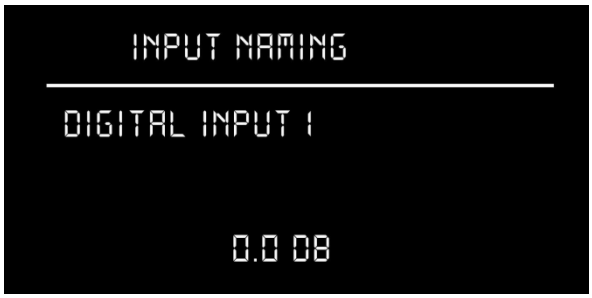
g. When all necessary inputs have been named, use the Exit menu item to return to the Installation menu.

No inputs will be available and displayed unless they have been named!

Input Sensitivity

This setting allows you to change sensitivity for each input source, so no change in volume level can be heard when the customer switches between signal sources.

a. In the sub menu, press **ENTER** to choose the input for which you want to change sensitivity.



b. To adjust the sensitivity in decibel, spin the search wheel counterclockwise for decreasing and clockwise for increasing sensitivity.
c. Press **ENTER** to store and exit each input.
d. Repeat the procedure for each activated input. Then select the Exit menu item to return to the Installation menu.

Default Volume

When the Model D is activated the volume will automatically be set at the default level. The factory setting for volume level is 55 dB (relative to the maximum 99.9 dB). This setting may be changed by this procedure:

a. Press **ENTER** to enter the Default Volume menu.
b. Adjust level by spinning the Search wheel.
c. Press **ENTER** to store the new setting and exit the menu.

Maximum Volume

The maximum volume setting is 99.9 dB. This can be changed to a lower level if necessary by the following procedure:
a. Press ENTER to enter the Max Volume menu.

b. Adjust level by spinning the search wheel.
c. Press ENTER to store the new setting and exit the menu.
For jazz or popular music, a maximum volume setting of 92 dB is recommended in order to avoid any amplifier clipping or speaker overload. For classical music, where general recording levels are lower than for pop music, a higher setting might be necessary. For popular music, a maximum volume setting of 92 dB is recommended.

MODEL D ROOMPERFECT™ CALIBRATION

RoomPerfect™ Introduction

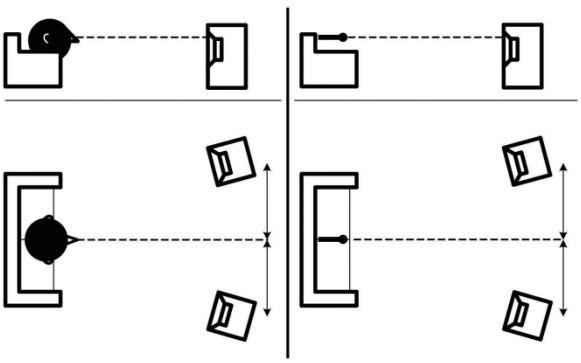
Step one is where the system will define the calibration volume level. Step two is a measurement in the main listening position, named Focus Position 1. During step three, the Room Measurement, you will be asked to place the microphone in typically 3-6 random locations in the room while RoomPerfect™ is mapping the acoustical properties. Finally, the system will automatically calculate and set the corrections necessary. The typical duration of the process is 15-20 minutes.

During measurements, you can talk and move around in the room. But the measurements will last longer depending on the level of background noise.

RoomPerfect Preparations

a. Place the microphone on the tripod stand. Be sure to fasten the screws properly so the microphone does not move during a measurement.
b. Plug the supplied microphone cable into the microphone.
c. Connect the microphone cable to the XLR microphone terminal on the rear panel of the head unit.
d. Place the tip of the microphone itself in Focus Position 1 – the primary listening position. The microphone must be aligned so that the nozzle is positioned where the centre of the listener's head would be located – right between the imaginary ears as illustrated. The microphone must point forward towards the loudspeakers. Do not block the line of sight during measurements.

RoomPerfect™ Volume Calibration



a. Enter the RoomPerfect Menu in the display.

b. Select Guided Measurement.

c. Press **ENTER** to confirm and to commence the calibration process. The test signal will start and shortly thereafter the system will suggest an initial estimate of the desired maximum calibration volume (in dB), displayed as shown below: Raise or lower the volume towards the desired maximum volume shown on the display, but ensure you avoid clipping, uncomfortably loud levels or damage to the loudspeakers.

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Continue choosing ‘Retry calibration’ for a re-estimation of the desired maximum calibration volume, until an appropriate calibration volume has been reached. If you find the suggested calibration volume too loud, then simply turn down the volume to an appropriate level and choose Save Current.

When the message ‘Volume calibration OK’ is displayed, the calibration volume has been set and saved.

RoomPerfect™ Focus Measurement

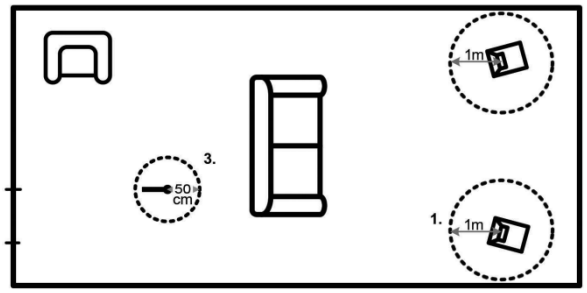
Press **ENTER** to start the Focus position measurement.

The display will ask you to place the microphone in the listening position. Press **ENTER** once more to commence the process.

Each measurement has four steps: A low and a high frequency measuring signal, first in the left and then in the right channel. The length of each measurement depends on a combination of the measurement volume, set in the calibration process, and the background noise in your local environment. Typical measuring times for the low and high frequency measuring signals are 25 and 5 seconds, respectively. You can exit a commenced measurement by clapping close to the microphone.

Do not sit in the listening position during measurement. The measurement will stop prematurely if an error occurs during the process, and an error message is displayed. Press **ENTER** to continue and 'Retry focus measurement – press Enter' is displayed. If the error needs correcting this should be done now. Then press **ENTER** to retry the measurement. The measurement procedure will start again.

A measurement has ended successfully when the last measuring signal stops and the display shows a RoomKnowledge rating, as 'RoomKnowledge XX% - Measurement OK.' Press **ENTER** to continue.



RoomPerfect™ Room Measurements

Now the room correction system will need to map the room as a whole. You must place the microphone in various room positions with random orientation in height and direction. These positions must be at least one meter (3.3 feet) away from the speakers. A minimum distance of 50 cm or 1.5 feet between the microphone positions is necessary.

Press **ENTER** in the Menu. The message ‘Measuring first Room Position - Please wait...’ will be displayed.

The test signals will sound until the message ‘RoomKnowledge XX%’ appears and you will be told to move the microphone to the next room position. Thereafter, place the microphone in another position and press **ENTER** to start the next measurement.

This procedure must be repeated at least 3-4 times until a RoomKnowledge of 90% has been reached. You will then be asked if you want to add more room measurements. Choose **YES** or **NO**. At this point, or any time later, you can decide whether the acquired room measurements are sufficient or you wish to add further room measurements to learn more about the room’s acoustical information.

Adding more room measurements results in a higher RoomKnowledge, this in turn improves the room correction filters. In general, the best results are obtained when RoomKnowledge exceeds 95%, which typically demands 6-8 measurements. To reach 100% RoomKnowledge you will need 10-15 measurements. When a sufficient level of RoomKnowledge has been reached, select **NO** when asked for more room measurements. In the next menu, select **YES** for saving the data.

Calculation of Focus 1 and Global Filters

The RoomPerfect™ system will now calculate the filters and show 'Calculating filters – Please wait' in the display. Global filter is a setting where the music will sound good and uniform all over the room, whereas Focus 1 optimizes the sound for the listening position.

Adding More Focus and Room Positions

You can add up to seven more Focus positions for the room, repeating the Focus 1 measurement procedure. You can also add Room Measurements to reach 100% RoomKnowledge. Adding one or more room measurements leads to a recalculation of all filters (i.e. Global and all Focus filters) due to the fact that more of room's acoustic properties have been learned, something that affects all filters.

RoomPerfect™ Status

In this submenu (last above) you will see how much the correction system knows about the room, and to which extent correction has been employed. RoomKnowledge is an index showing how many of the acoustical properties in a room have been mapped. The higher degree of knowledge, the greater the accuracy of the room correction. The RoomCorrection index is a measure of how much processing is being employed in the room correction filters. To some extent, the RoomCorrection index reflects how audible the correction is. However, the same amount of processing can sound very different due to placement in frequency of the processing.

For low values (below 10%) of the room correction index, only subtle correction is needed to the original sound in the room. With high room correction index values more extensive processing is employed.

ROOMPERFECT™ TROUBLESHOOTING

‘No microphone connected’

This is displayed when no microphone is connected to the head unit.

Solution: Connect the microphone cable on the left-hand side of the back panel.

‘Fault – No signal’

The incoming signal is classified as pure noise. This happens when the measuring signal is too low compared to the noise from the local environment. This could be due to too much noise in the room.

Solution: Raise the measuring signal volume before continuing with the measurement.

This error message is also displayed when Mute is activated.

Solution: De-activate Mute.

‘Fault – Signal clipping’

The incoming signal is classified as too loud resulting in clipping (distortion).

Solution: Reduce volume; repeat measurement.

A loud noise from the local environment has corrupted the measurement results.

Solution: Repeat measurement with no changes; reduce noise levels inside or close to the room.

‘Fault – Low signal’

This is displayed when the measurement has lasted more than 5 min. for the low frequency signal or 2 min. for the high frequency signal. This happens most often when using a low level measuring signal compared to the background noise of your environment, which results in prolonged measuring times. Solution: Raise the measuring signal volume before continuing with the measurement, or reduce the noise from the environment.

The Model D Music System will show an error message (-E-) in the volume display in case of speaker related problems.

The causes can be:

• No mains power to the speakers. Check the cable connections and the mains power switches on all speakers and the wall outlets.

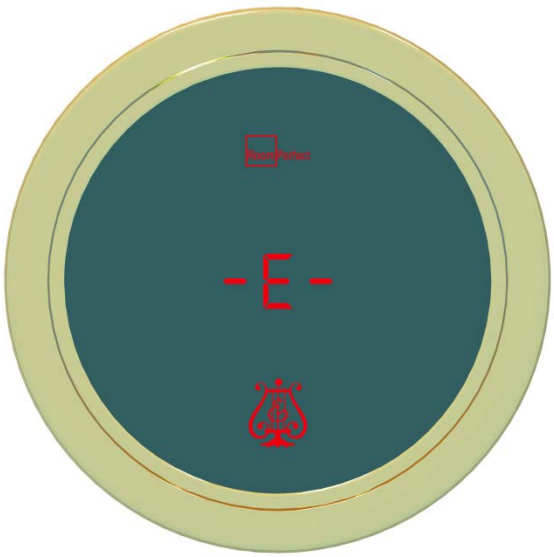
• No link cable connected between head unit and speaker (one or more).

• Wrong ID address for one speaker or more. This must be encoded via DIP switch on the rear panel of the amplifier cabinet.

• Identical ID address for two or more speakers.

• Wrong number of speakers connected compared to the number specified during installation.

Error message for speaker connection



The calibration microphone is very sensitive and may pick up unwanted noise disturbing the measurements, also subsonic signals, causing errors. The RoomPerfect ™ calibration process will stop prematurely and an error message will be displayed. You will be asked if you want to ‘Retry measurement.’ Press Enter to retry.

In case of errors, one of the following messages will be shown in the head unit display: RoomPerfect™ troubleshooting WARNING: The microphone is a very sensitive and calibrated device. Treat it with utmost care. If the microphone has been dropped on the floor, or otherwise maltreated, it may have been damaged. Contact Steinway Lyngdorf for a replacement before final system calibration!

RESET, INTEGRATION, HANDING OVER TO OWNER

Factory Reset

WARNING: This function will reset all inputs to factory setting. All setup data and all RoomPerfect™ measurement data will be lost.

a. Press **ENTER** to enter the menu.

b. Choose **YES** or **NO** to resetting.

c. If Yes: All measurements and delays will be erased.

Integration with Home Automation Systems

An interface box has been supplied in the Accessories Box. This communicates via RF with the Model D head unit. You install it like a remote control which is also working on RF.

a. Select Add Remote in the Model D Installation Menu.

b. Connect the supplied Remote Interface Box to, for instance, the Crestron system and to mains power.

c. The MAC address of the interface box will be displayed. The system will ask if you wish to add it. Confirm this.

d. If you experience repeated problems or no connection, you can manually override the auto channel selection and choose another channel. A white paper with detailed setup information is available.

Handing over the System to the Owner

- Polish the system for perfect appearance with the supplied micro fibre cloth. Dust and fingerprints are highly visible on the black piano gloss lacquer. If necessary, moisten cloth with distilled or demineralized water only.
- Clean the rooms and locations involved completely for packaging remains and vacuum clean the floors.
- Fill out and sign the Installation Certificate in the Owner's Manual.
- Make sure the owner understands that the documents must be stored at a safe place, for instance by putting the Owner's Box onto a bookshelf.
- Demonstrate the system features for the owner.
- Demonstrate the sound for the owner.
- Put your business card into the Owner's Manual Box for future reference.

Repacking of Model D Music System

In case the system components are to be moved to another location, requiring extensive physical handling or repacking into the shipping crates, it will be necessary to wrap the speakers into protective foil as they were delivered from the factory.

To avoid damage to the lacquer, you must only use the original protective factory foil which you can obtain from Steinway Lyngdorf. If shipping by forwarder is necessary, you will need Tip'N'Tell and Shockwatch indicators, which are also available from Steinway Lyngdorf.

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SERVICE INFORMATION

In order to obtain warranty service you must contact your original dealer or the Steinway Lyngdorf distributor of the region or country where you are located. If you have trouble locating an authorized representative, please contact the Steinway Lyngdorf Customer Service Department using the contact information at **www.steinwaylyngdorf.com,** or you may email service@steinwaylyngdorf.com.

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In some cases, the Customer Service Department may solve a service problem without the need of repair or any other measures, thereby avoiding further inconvenience or delay. In some cases it may be necessary to return the equipment to Steinway Lyngdorf or an authorized service provider for repair; therefore, it is recommended that you save your original packing materials. Steinway Lyngdorf will not be responsible for any damage due to unauthorized packing or shipment in non-original packing materials. If return is made in authorized packaging, risks are borne by Steinway Lyngdorf. Additional charges may occur if new packing materials are required for return shipment.