Newton Series® HD

CAMBRIDGE SOUNDWORKS®

MC650HD

High Performance Loudspeaker for Flat Panel HDTVs
User Manual

Cambridge SoundWorks, Inc.
120 Water Street
North Andover, MA 01845
1-800-FOR-HIFI
cambridgesoundworks.com or hifi.com

INTRODUCTION

Thanks for choosing a Newton HD Series speaker. The MC650HD features the finest drivers, precision internal crossover circuitry, and an elegant enclosure design.

The design team at Cambridge SoundWorks believes there is no better combination of audiophile-level attention to detail and reasonable cost.
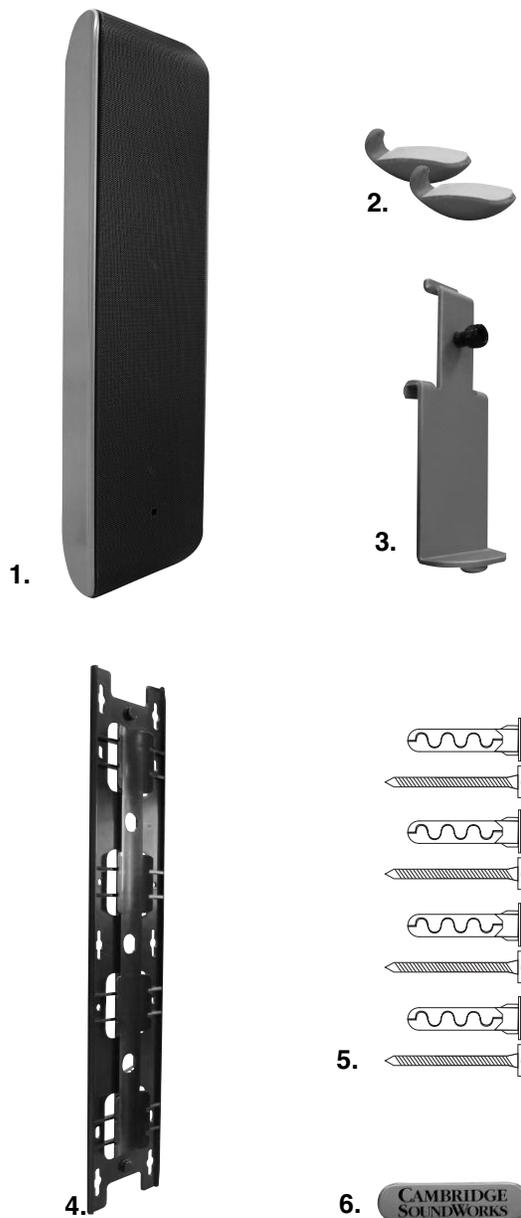
AFTER UNPACKING

Store the shipping carton and packing material for future use and transport.

CONTENTS
1. One Speaker
2. Two stick-on rubber feet
3. Center Channel rear support
4. Wall mount bracket
5. Four screws and wall anchors
6. Logo Badge

INSPECTING FOR DAMAGE

Examine each part carefully for shipping damage. If there is any, do not install or use the speaker. Return the speaker to the merchant where you made the purchase or call Cambridge SoundWorks at 1-800 FOR-HIFI (1-800-367-4434) for assistance.

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SPEAKER PLACEMENT

The proper placement of speakers affects how well the AV surround system recreates the soundfield intended by the recording engineer. Current recording practice typically assumes a speaker array with a center channel speaker directly in front of the central viewing position. Left and right speakers are placed so they each form a 30 degree angle from the centerline. Left and right surround speakers should be 110 degrees from the centerline. Left and right rear speakers in a 7.1 system should be at 140 degrees. If a single rear speaker is used in a 6.1 system, it should be centered on the rear wall. Front speakers should be as close to the height of the TV monitor as practical. Surround and rear speakers should be slightly higher. Recreate this speaker pattern as closely as your room and furnishings allow.

Don't be too concerned if your situation and listening environment dictate the speakers' position. Most rooms do not allow ideal placement. Place your speakers as close to these guidelines as practical. The speakers will still provide convincing, lifelike sound.

Your surround processor has a variety of adjustments to optimize the sound based on the speakers' capabilities and placement. These adjustments vary by processor, so refer to your processor's manual for instructions specific to your equipment. Set your main, center, and surround settings to "SMALL", with subwoofer "ON". If your processor allows you to adjust the crossover frequency, set it as close to 100Hz as possible.

• Avoid placing front left and right speakers very close to a side wall (within 12-14 inches). The reflected sound from the wall degrades the sound coming directly from the speaker.

RECOMMENDED DISTANCE APART FOR STEREO

20° - 55° ANGLE

APPROX. EAR LEVEL

MAXIMUM RECOMMENDED DISTANCE APART FOR HOME THEATER

MAIN SPEAKERS

MAIN SPEAKER

CENTER CHANNEL

MAIN SPEAKER

SURROUND SPEAKER

LEVEL WITH CENTER SPEAKER

110° 30° 30° 110°

SURROUND SPEAKER

140° 140°

POWERED SUBWOOFER

7.1 REAR SPEAKER

7.1 REAR SPEAKER

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WIRING THE SPEAKERS

If you wish to conceal the wire within the walls, it is easiest to run the wires to their final positions prior to mounting the speakers.

The spring loaded terminals of the MC650HD accept bare wire between AWG #12 and AWG #18 (lower numbers are thicker). It is not necessary to "tin" the wire or use connectors to terminate the wire.

- Use at least AWG #18 speaker cable for short runs (under 15 feet). Use AWG #16 or heavier speaker cable for longer runs.

- Building codes typically require plenum rated wire for installation within walls. Be sure to use wire that complies with any applicable local building codes. Plenum rated cable typically has an outer jacket with individually insulated conductors inside the outer jacket. Some brands of plenum rated cable may be too thick to fit the space between the wall mount bracket and the speaker. To use heavier plenum rated speaker cable with the wall mount brackets, remove the outer jacket and any filler cord back to the point where the wire exits the wall.
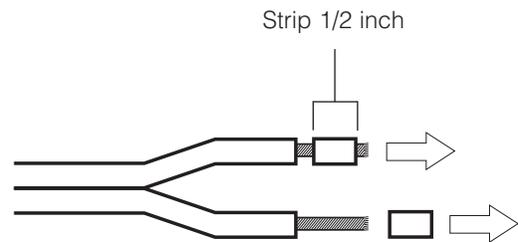
Strip 1/2 inch

Preparing the wires:

1. Determine how long the speaker cable should be for each speaker. Cut the speaker cable into the appropriate lengths.

2. Route the wire to each speaker location.

3. Strip 1/2 inch of insulation from the two individual conductors in the speaker cable. Twist the exposed strands of bare wire together.

4. Determine which conductor you will use to connect the positive terminals of the amplifier and speaker together. Printing or a ridge on the insulation usually distinguishes one of the two conductors. Sometimes the metal of the conductors has two different colors, or the insulation color of each conductor may be different.

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TO ATTACH THE WIRES

1. Press the speaker's red terminal to expose the hole in its shaft.

2. Insert the stripped end of one cable's positive conductor into the speaker's red (+) terminal.

3. Release the terminal to secure the connection. Make sure no stray strands of wire are present.

4. Repeat the procedure for the cable's other conductor and the speaker's black (–) terminal.

5. Connect the opposite end of the speaker cable to the speaker outputs of your receiver. Remember to observe channel and polarity (Left Positive, Left Negative, Right Positive, Right Negative).

6. Repeat the process for each speaker.

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SPEAKER MOUNTING

The MC650HD may be wall mounted or placed horizontally on a table top as a center-channel using the included hardware. Matching floor and table-top stands are available separately from Cambridge SoundWorks.

Hanging the speaker on the wall:

The MC650HD may be mounted either vertically or horizontally using the supplied wall bracket. Method #1 is recommended. Use Method #2 if there is insufficient clearance for Method #1.

Method #1 – Use this method when mounting the speaker vertically when you have at least 21" clearance above the top of the wall mount bracket. Use this method whenever mounting the speaker horizontally.

1. Using the wall mount bracket as a guide, mark at least four locations for mounting screws. It is best to use the holes at the four outermost corners. If concealing the wiring in the wall, position the bracket so that the wire exits the wall through the large hole in the center of the bracket. The wire should extend through the bracket approximately 12". Drill a 1/4" diameter hole and install wall anchors in each location. Refer to the instructions in the Appendix for proper use of the Toggler brand anchors included with this speaker.

2. Attach the mounting bracket securely to the wall using four #10 screws.

3. Attach the wire to the speaker terminals. Slide the speaker on the bracket from the top while guiding the wire through the channel between the speaker and bracket.

4. Pull the speaker logo straight out to remove it. Use a philips screwdriver to gently tighten the lock screw concealed in the hole behind the logo to secure speaker to the bracket. Do not over-tighten. It only requires slight pressure! Pay attention to the wire location so that the screw does not penetrate the speaker wire. Install the logo so that the text is upright.

Note: Screw is already installed within speaker. Use philips screwdriver to tighten. (See #4)

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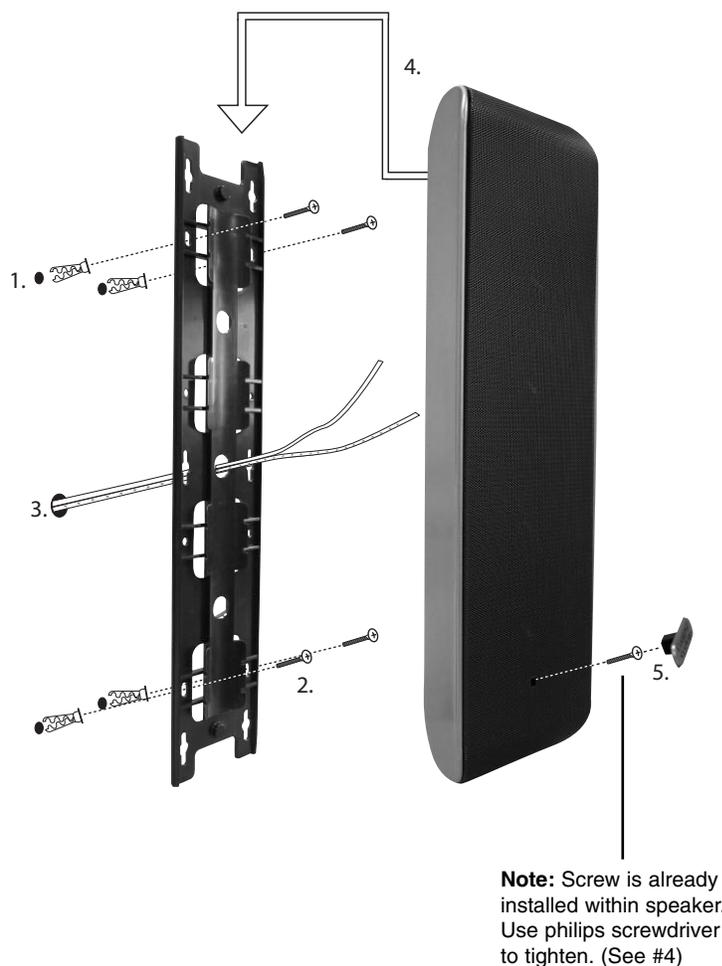
SPEAKER MOUNTING

Method 2 – Use this method to mount the speaker vertically when you have less that 21" clearance above the top of the speaker bracket. Always use method #1 when mounting the speaker horizontally, and whenever at least 21" clearance is available.

1. Using the wall mount bracket as a guide, mark at least four locations for mounting screws in the elongated keyholes found at the four corners and center sides. It is best to use the holes at the four outermost corners. If concealing the wiring in the wall, position the bracket so the wire exits the wall through the large hole in the center of the bracket. The wire should extend approximately 12".

2. Drill a 1/4" diameter hole and install plastic anchors in each location. Refer to the instructions in the Appendix for proper use of the Toggler brand anchors included with this speaker.

3. Insert #10 screws in each anchor and tighten them until they extend approximately 1/4". Temporarily place the bracket in place and tighten the four mounting screws to the point that the bracket can still be be removed. You should have to supply slight pressure to slide the bracket back into place between the wall and screws.

4. Pass the wire through the center hole of the bracket. Attach the wire to the speaker terminals. Slide the speaker on the bracket from the top while guiding the wire through the middle of the channel formed between the speaker and bracket.

5. Pull the speaker logo straight out to remove it. Use a philips screwdriver to gently tighten the lock screw concealed in the hole behind the logo to secure the speaker to the bracket. Do not over-tighten. It only requires slight pressure! Pay attention to the wire location so that the screw does not penetrate the speaker wire. Install the logo with the text upright.

6. Align the speaker and bracket assembly over the four screws and press downward about 1/2" so that the screws lock into the keyhole slots in the bracket. Guide any slack speaker wire back into the wall as you position the speaker.

Note: Screw is already installed within speaker. Use philips screwdriver to tighten. (See #4)

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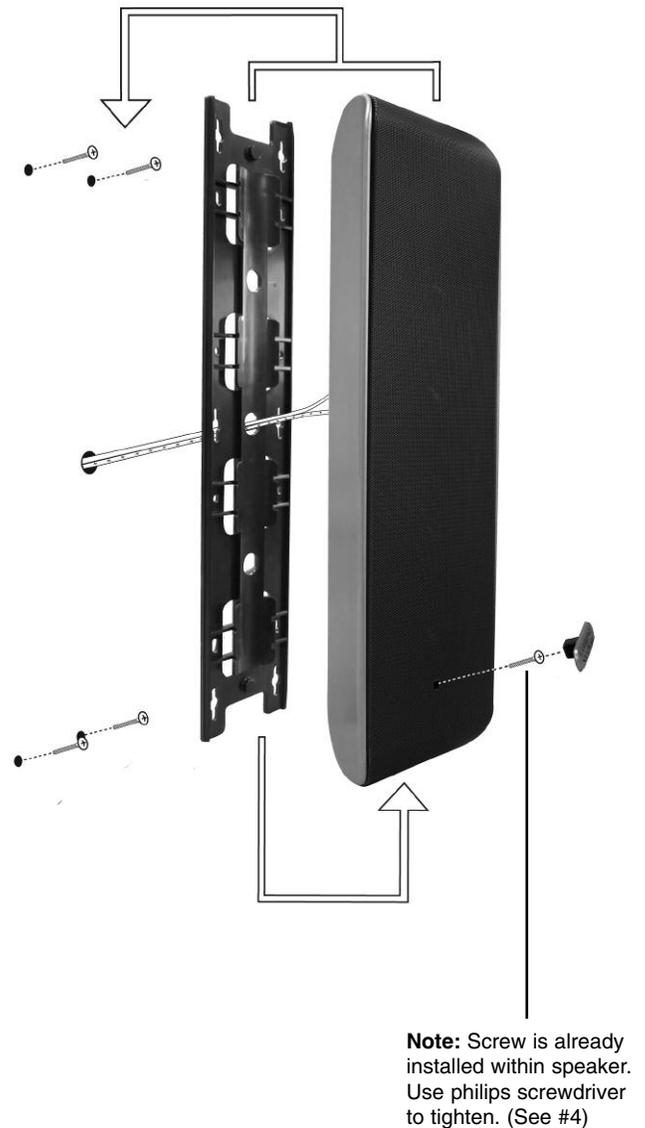
HORIZONTAL PLACEMENT

To place horizontally on a tabletop or shelf:

1. Attach two rubber hook-shaped stick-on feet symmetrically along the bottom edge of the speaker approximately 18" apart. If you are mounting the speaker on an uneven surface you may need to attach the feet closer to the center. Adapt the actual position to your needs. You may orient the speaker so that the terminals are at either end.

2. Slide the rear support into the channel on the rear of the speaker until it is in the approximate center of the speaker. Orient it so the foot is along the same side as the rubber feet you installed in step 1.

3. Tighten the set-screw finger-tight to stabilize the support.

4. Remove the logo by pulling it straight out. Turn it 90 degrees so that the text reads correctly. Press it back in place.

1.

3. **2.**

4.

8
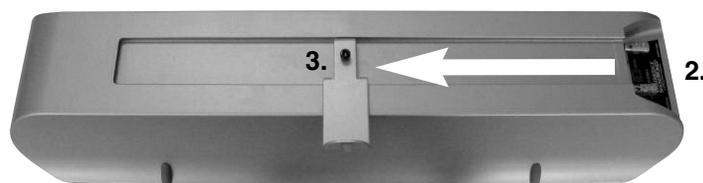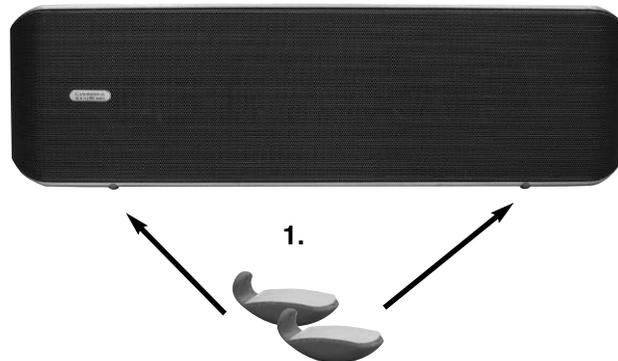
SETTING BASS CONTOUR

The switch located near the connection terminals optimizes the low frequency response of the speaker for wall or stand mounting.

• When the speaker is mounted on a speaker stand, away from the wall press the end of the switch marked with "I".

• When the speaker is mounted on the wall or table, press the end of the switch marked with "O". The upper bass range will be slightly attenuated to compensate for the increase in bass caused by wall reflection.

The above recommendations should yield the most accurate response in each example, but they are optional. If you prefer the sound with settings opposite the above recommendations, feel free to use your settings instead.

Automatic Tweeter Protection

he MC650HD can be safely used with any receiver rated above 30 watts per channel. There is little advantage in using more power than 100 watts per speaker, but receivers above this power rating can be used so long as the receiver is not operated at distorted levels.

To protect the tweeter, a self-resetting circuit breaker is incorporated into the MC650HD crossover network. If the speaker is overpowered for an extended period, this circuit breaker will open and the tweeter will be disconnected. When the volume is reduced or the overload has passed, the circuit will reset and normal operation will be restored.

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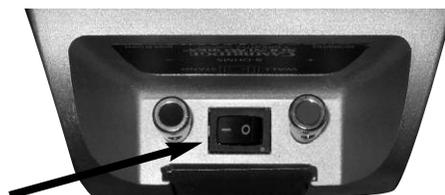
SPECIFICATIONS

Warning About Excessive Amplifier Distortion:

Operating a receiver (of any power rating) beyond its maximum undistorted output level creates distortion – added high frequency sound not part of the musical program. Distortion dramatically increases the internal operating temperature of a speaker and will eventually cause the speaker's failure due to burned or melted internal parts. While Cambridge SoundWorks includes the most heat-tolerant parts commensurate with good acoustic design, the speaker's Limited Warranty against defects in materials or workmanship does not apply to parts that fail from long-term operation at very high temperatures.

Enclosure Cleaning

The speaker enclosures can be cleaned with a soft, damp cloth or mild cleaner.

Brush or vacuum the grille panels with a soft brush attachment to your vacuum cleaner.

Specifications

Dimensions: 25-3/8" H x 7-1/8" W x 3-15/16" D
Weight: 14-1/2 pounds each
Impedance: nominal 8 ohms
Recommended amplifier power range: 20W – 100W RMS per channel.
Frequency Range: 80Hz – 24kHz.
Woofer Type: 4 x 3-1/2" with co-injection molded composite cones and butyl-rubber surrounds.
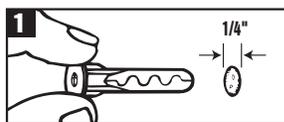Tweeter Type: 1/2" aluminum dome with ferrofluid-damping and neodymium magnet.
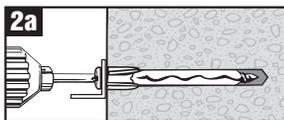Crossover: 2-1/2 way, series-connected with selectable wall-mounting compensation.
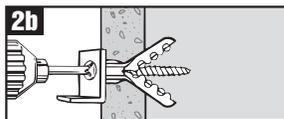Enclosure: High-density pressure-cast aluminum with molded-composite baffle.

Appendix

TOGGLER®BRAND
AF6™ ALLIGATOR®
Solid-Wall Anchors

Drill 1/4" diameter hole — minimum hole depth $1\frac{1}{2}$". Insert anchor and tap flush.

Place item over anchor. Insert screw and tighten flush. For best results use screw gun for installation in solid walls.

In walls of minimum thickness 3/8", screw opens anchor and locks securely.

Patented under U.S. Patent Nos. 4,752,170 and 5,161,296; and foreign counterparts thereof. Other patents pending. TOGGLER and typeface, and ALLIGATOR are worldwide registered trademarks of Mechanical Plastics Corp.
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WARRANTY

LIMITED WARRANTY

Cambridge SoundWorks®, a Creative company, warrants the following Cambridge SoundWorks
products for the periods indicated:

Loudspeakers for interior use without active amplifiers:

5-year parts and labor from the product's Date Of Purchase (DOP) from an authorized Cambridge SoundWorks retailer.

Powered Subwoofers for interior use:

5-year limited parts and labor warranty on speaker elements, passive circuitry and cabinet workmanship from DOP. 2-year limited parts and labor warranty on the active amplifier circuitry from DOP.

Loudspeakers for exterior use:

1-years parts and labor from the product's DOP from an authorized Cambridge SoundWorks retailer.

PCWorks®, SoundWorks®, and MicroWorks® PC/Multimedia speaker systems:

1-year limited parts and labor warranty from DOP from an authorized Cambridge SoundWorks retailer.

SoundWorks® High Performance Table Radios and other electronics:

1-years parts and labor from the product's DOP from an authorized Cambridge SoundWorks retailer.

What is covered and what is not covered:

Except as specified below, this warranty covers parts and labor to correct all defects in materials and workmanship. The following are not covered by the warranty:

1.Damage, deterioration, malfunction or failure to meet performance specifications resulting from:

  a. Accident, acts of nature, misuse, abuse, neglect or product modification.
  b. Improper installation, removal or maintenance, or failure to follow instructions supplied
with the product.
  c. Repair or attempted repair by anyone not authorized by Cambridge SoundWorks
to repair the product.
  d. Any shipment of the product (claims must be presented to the carrier).
  e. Any cause other than a product defect.

2.Cleaning, initial setup, checkups with no defects found, or charges incurred for installation, removal or reinstallation of the product.

3.Any product on which any serial number has been defaced, modified, or removed.

4.Batteries.

5.Accessories, including but not limited to batteries, cables, mounting hardware and brackets, cleaning accessories, antenna and detachable power cords.

6.Any product purchased outside the U.S.A., its possessions or territories.

Who may enforce the warranty:

This warranty may only be enforced by the original purchaser.

WHAT CAMBRIDGE SOUNDWORKS, USA WILL PAY FOR:

We will pay for all labor and material expenses for items covered by the limited warranty. Payment of shipping charges is discussed in the next section of this limited warranty.

How You Can Get Service:

1. If you feel your unit needs service, contact Cambridge SoundWorks Return Authorization by calling toll-free (800) 367-4434. If we agree service is required, we will provide you with a Return Authorization number. Please do not return your unit to the factory prior to obtaining a Return Authorization.

2. You must pay any shipping charges to Cambridge SoundWorks. For repairs that are covered by this Warranty, Cambridge SoundWorks will pay the return shipping charges to any destination within the fifty United States.

Limitation of implied warranties:

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

Exclusion of damages:

Cambridge SoundWorks, USA's liability for any defective product is limited to repair or replacement of the product at Cambridge SoundWorks, USA's option. Cambridge SoundWorks, USA shall not be liable for damage to other products caused by any defects in Cambridge SoundWorks product, damages based upon inconvenience or loss of use of the product, or any other damages, whether incidental, consequential, or otherwise.

How state law relates to the warranty:

Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

This warranty is enforceable only inside the U.S.A., its possessions or territories.

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