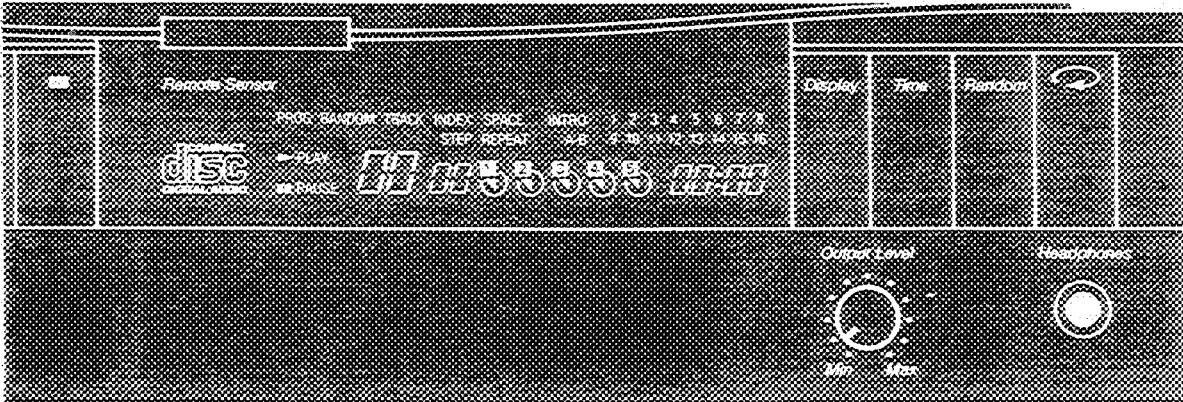




TL8500/TL8600





 harman/kardon

Carousel CD Changer

OWNER'S MANUAL

TL8500/TL8600 CAROUSEL CD CHANGERS

**CAUTION**
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

Thank you for choosing a Harman Kardon CD changer.

And congratulations. Your new unit is an exceptionally well-engineered product that will give you years of superb performance.

Among its special features are:

■ Exceptional Sound Quality

Like all Harman Kardon products, the TL8500 and TL8600 are designed and manufactured to perform with sonic excellence.

■ "3-D Bitstream"

Harman Kardon employs a unique "3-D bitstream" D/A converter and discrete analog section to assure a smooth, lifelike sound.

■ Heavy Duty Construction

The rugged steel sub-chassis and high-density resin enclosure result in a solid feel and precise disc tracking.

■ Large Fluorescent Display

Bright, clear graphics and alphanumerics enable operational information to be read easily at a distance.

■ Random Play

The Random Play mode provides truly random selection either among all tracks on all discs or only among those discs and tracks that you designate.

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

ATTENTION : POUR ÉVITER LES CHOCS ÉLECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications. *Le présent appareil numérique n'émet pas de Bruits Radioélectriques Dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.*

To get the most from your new CD changer, please read this manual carefully and follow its instructions. Save this manual for future reference.





GENERAL INSTRUCTIONS

Use 120-volt 60-cycle AC only.

Connecting the unit to an outlet supplying a higher voltage may create a fire hazard.

Handle the Power Cord Gently.

- To disconnect the plug from the AC outlet, pull on the plug itself, not on the cord.
- Disconnect the plug from the AC outlet whenever the unit is to be left unused for an extended period of time.
- Do not place furniture or other heavy objects on the cord, and avoid dropping heavy objects on it. Also do not make a knot in the cord.
- Do not disconnect the AC plug while the unit is operating.

Place the unit on a firm and level surface.

Avoid installing it:

- Outdoors;
- In moist or humid places;
- Close to heating equipment or in places exposed to direct sunlight;

- In a direct draft from an air conditioner or in other very cold locations;
- In places subject to excessive vibration or dust;
- In poorly ventilated places.

Moving the Unit.

Before moving the unit, be sure to unplug the power cord and output cables.

Cleaning.

Remove dust by wiping the unit with a soft, dry cloth. If necessary, use a soft cloth lightly dampened with mild soapy water; then wipe with a dry cloth. Never use benzine, thinner, alcohol or other volatile agents, and avoid spraying insecticides near the unit.

Interference.

This compact disc player uses high-frequency signals that can sometimes interfere with reception in tuners and televisions. If you start to experience reception problems after connecting and turning on your CD player, move it farther away from your tuner or television set or turn the CD player off when it is not in use.

Abnormal smells.

If you detect an abnormal smell or smoke, immediately turn the compact disc player off and pull out the power cord. Contact your dealer or nearest Harman Kardon service center.

Service.

Your compact disc player should be serviced by authorized Harman Kardon service personnel when:

- The plug or power cord has been damaged.
- Objects have fallen into the unit.
- Liquid has been spilled into the unit.
- The unit has been exposed to rain.
- The unit does not operate normally.
- The unit has been dropped or the cabinet has been damaged.

Please do not attempt to service your compact disc player beyond the troubleshooting suggestions in this manual. All other service should be referred to authorized Harman Kardon service personnel.

Care of the Laser Pickup.

The laser pickup that detects the music recorded on a CD is located under the compact disc carousel. The laser pickup, especially its precision lens, is particularly sensitive to dust. Keep the top cover closed when the unit is not in use.

Class 1 Laser Product.

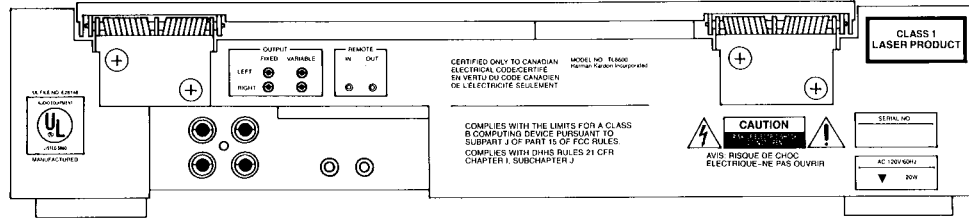
Product complies with DHHS rules CFR subchapter J part 1040:10 at date of manufacture.

DANGER — invisible laser radiation when opened and interlock failed or defeated. Avoid direct exposure to beam.

CAUTION — use of all controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



INSTALLATION




Save all packing material.

It is essential for shipping should you move, or in the event the unit ever needs repair.

Unlock the transportation locking system.

1. Place the unit on its side, on a cloth or other soft surface.
2. Remove the plastic clamp key on the bottom of the unit, by turning it counterclockwise 1/4 turn. Keep the key for future use.
3. Locate the lock shaft, located in the recessed area in the center of the bottom, and pull it to its "out" position.

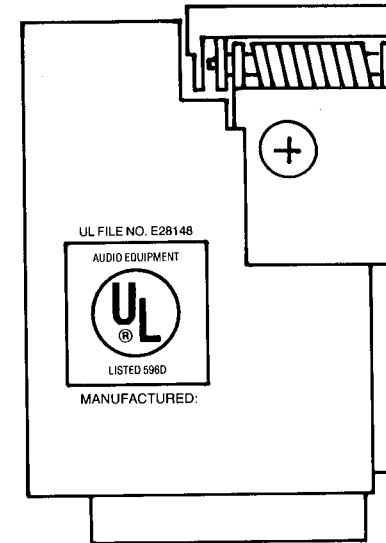
NOTE: Always relock the unit before re-packing and transporting it. To do so:

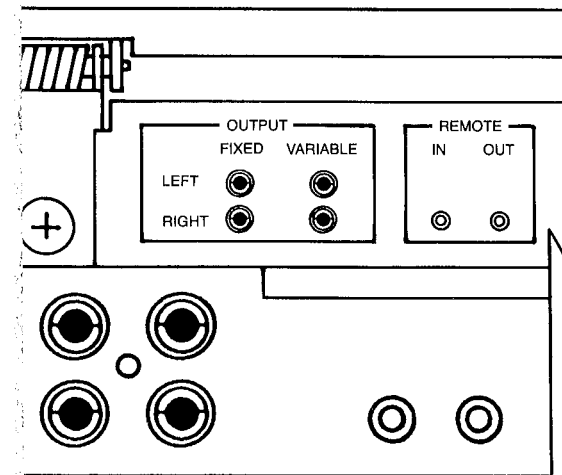
1. Turn on the power, remove all discs from the carousel, and press the Disc Skip button once.
2. When the carousel stops moving, turn the power off, close the dustcover, and unplug the power cord.
3. Stand the unit on its right side, (with Power button on top and  button on bottom). Insert the clamp key into its slot and turn it clockwise 1/4 turn.
4. Then push in the lock shaft to its "in" position.

Connect the unit to your receiver, integrated amplifier or pre-amplifier.

With all components turned off, use the cables supplied with your CD changer to connect the output jacks on the changer to the input jacks marked "CD" (or "AUX") on your receiver/pre-amplifier/integrated amplifier. Use the black, white or gray plugs to connect Left channel jacks, and the red plugs for Right jacks.

TL 8600 only: The unit is equipped with two sets of output jacks. If you wish to control the volume of your CD changer using the Output Level controls on your unit and/or its remote, use the "Variable" output jacks. Otherwise, use the "Fixed" output jacks, and control the volume using your receiver/pre-amplifier/integrated amplifier.





Connect a wired remote control, if desired.

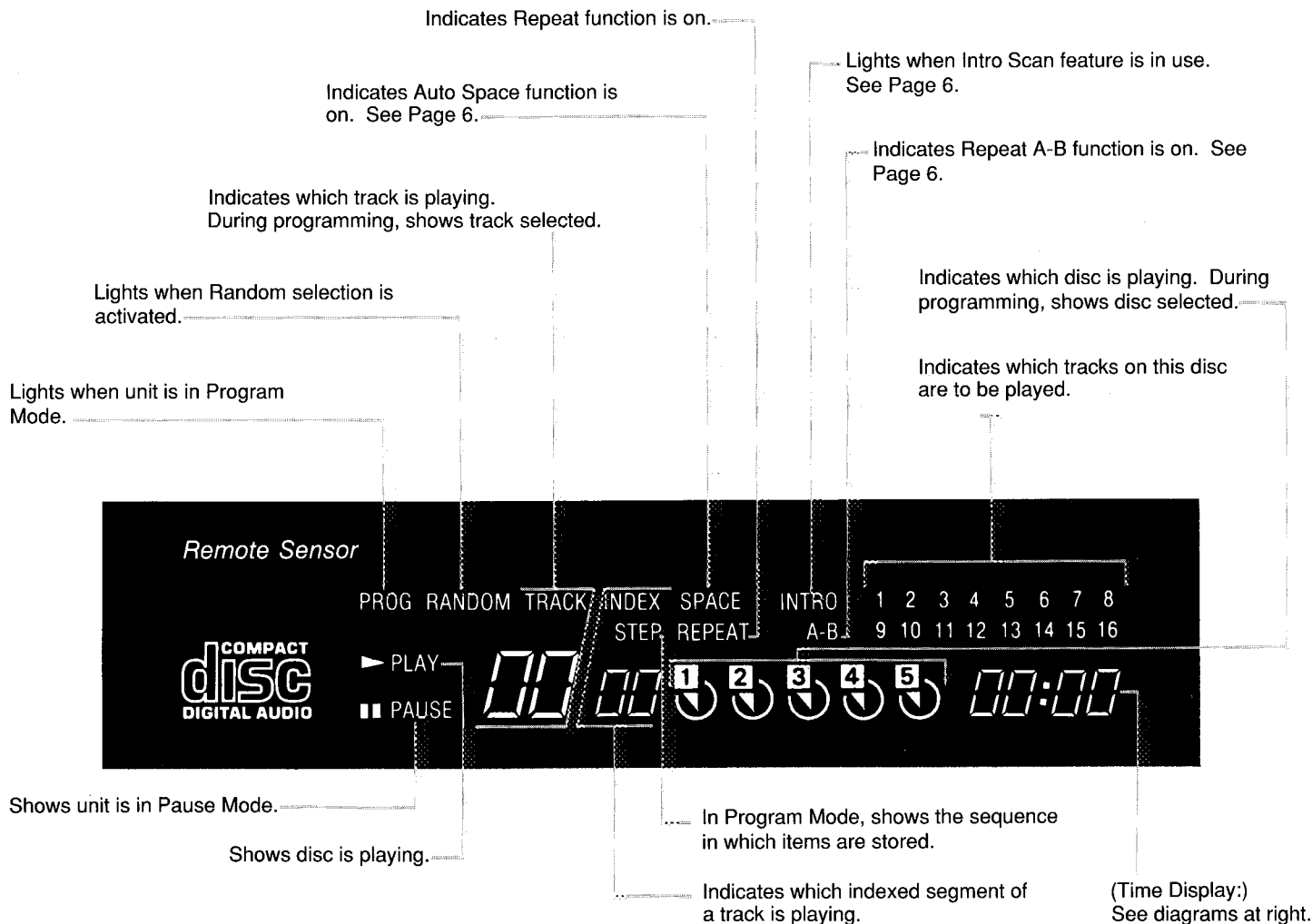
To control your CD changer with an external infrared remote sensor, connect the wire from the remote sensor to the "Remote In" jack on the back panel. Or, if you have a stereo component with a built-in infrared remote sensor and a "Remote Output" jack, it may be possible to connect this jack to the "Remote In" jack of your CD changer. All Harman Kardon products with "Remote In" and "Remote Out" jacks are compatible with one another, except for the Citation 22, 24 and 25. Other manufacturers' remote sensors may or may not be compatible, but it will not hurt to experiment.

A second wire may be used to connect your CD changer's "Remote Out" jack to the "Remote Input" of another stereo component. Continue this process to include additional components (if compatible).

To control your CD changer, you may use the remote control supplied with your unit. Or you may use a universal remote control unit, such as Harman Kardon's Masterworks™, which can also control other components, such as TVs, VCRs, tape decks and receivers. Masterworks is available from your Harman Kardon dealer.



DISPLAYS



Time Display:

Press the time button to select among the following displays:



a. Elapsed time since the start of the track.



b. Time remaining until the end of the track.



c. Time remaining until the end of the disc.



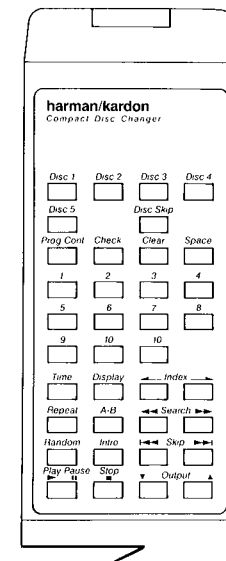
d. Total time of the disc (number of tracks is also displayed).

TOP DISPLAY (not shown)

(TL8600 only.)

Track, Index/Step and Disc indicators function exactly as in the front panel display.

REMOTE CONTROL



Function Buttons

The Remote Control provides the same functions as the CD changer, with the following exceptions:

- There is no Power switch on the Remote Control.
- (TL8600 only.) The Remote Control provides two buttons, rather than a dial, to control Output Level. Press ▲ to raise, and ▼ to lower Output Level.
- The Remote Control provides five keys not found on the CD changer. These features are described below.

Previewing Disc(s) Using Intro Scan

When Intro is pressed, the CD changer automatically plays the first 15 seconds of each track on each disc, in order. In Program Mode, Intro Scan plays only the selected tracks, in the sequence programmed.

To cancel, press Intro again, if you wish the disc to continue playing from its present position. Or press Stop.

Repeating Selected Segments Using A-B

To repeat any desired segment:

- With unit playing, Press A-B key at the start of the desired segment. ("Repeat" and "A-" light up on the display.)
- Press key again at the end of the desired segment. ("B" also lights on display.) The designated section will be repeated continuously.

To cancel repeat and continue playing the disc, press Repeat or A-B. To stop play, press Stop.

The designated segment may be part of a single track, or may extend through several tracks on a single disc (Continuous Mode only). If no point B is set, the player will set point B at the end of the current disc in Continuous Mode; at the end of the current track in Program Mode.

Using Index Search

Some CDs contain long tracks that are subdivided into shorter segments, each identified by an Index number. When you are playing such a track, you may skip forward or back to the start of any desired index segment.

Press the Index key to skip to a higher index segment; press to skip to a previous segment.

Using Auto Space

Some tape cassette players use the time interval between tracks to locate the beginning of a desired track. On many CDs, however, such spaces may not be present. If you wish to play a disc with spaces inserted, press the Space key on the Remote Control before or during playback. ("Space" will light up on display panel.) The player will automatically insert 4-second spaces between each track.

To cancel Auto Space, re-press the Space key. This feature is also canceled when Stop is pressed.

Operating Conditions

The control unit operates effectively within a distance of 7 meters (23 feet) and an angle of 30° from the CD changer. Using the control near fluorescent lights may shorten this range, as will any dust or dirt that accumulates on the front of the remote control, or the "Remote Sensor" area of the CD changer. Also avoid blocking the line of sight between the unit and the remote.

The control unit is powered by two AA batteries, included with your CD changer. When you replace weak batteries, replace both at the same time. When the remote is to be unused for an extended period, remove the batteries to prevent damage from corrosion.



CONTROLS

Skip Reverse/Forward

Use to move quickly to the start of any desired track. (For use in programming, see Page 12.)

Manual Search

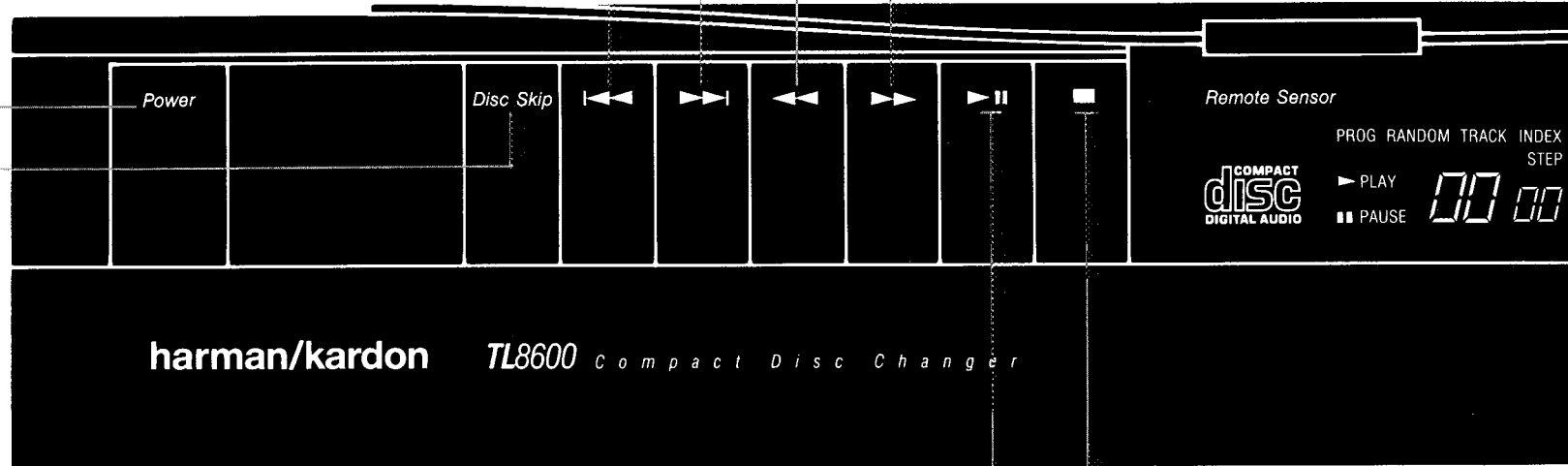
Use to move quickly to any desired point on a disc.

Power

Press to turn unit on/off.

Disk Skip

Press to turn carousel when loading/unloading discs, or to move to a new disc during Play.



Play/Pause

Press to play discs. When unit is playing, press to Pause playback while maintaining the present position on the disc.

Stop

Press to stop play.

Repeat

Press to replay entire contents of carousel or program. To replay specific segments, see Page 10.

Random

Press to play tracks in random sequence.

Time

Press to select time Display. See Page 5.

Display

Press to turn Display on/off.

Disc Selectors

Press to choose desired disc.

Door Release

Press to raise dustcover to load/unload discs.

Track Selectors

(TL8600 only.) Press to choose desired tracks.

Clear

(TL8600 only.) Press to erase tracks from memory.

Check

(TL8600 only.) Press to review program in memory.

Program/Continue

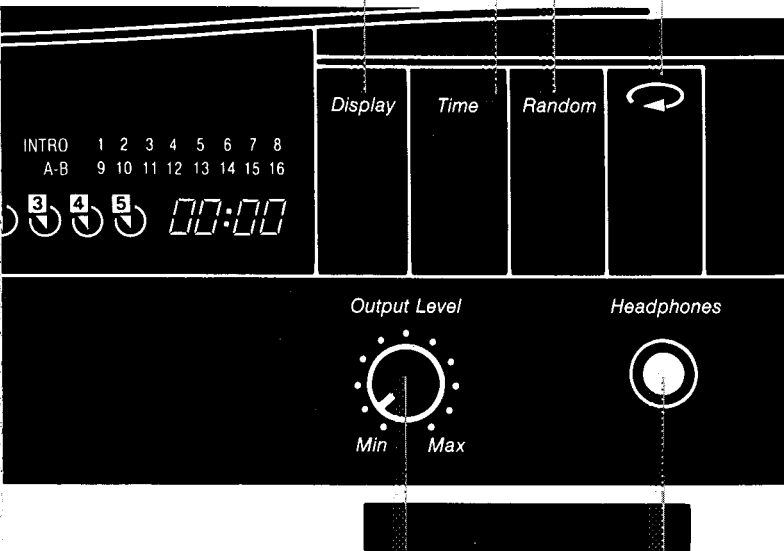
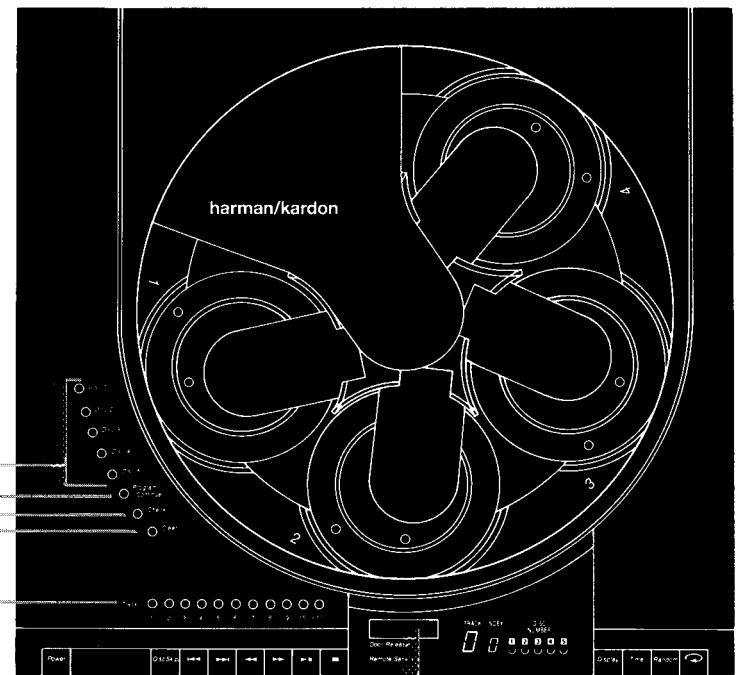
Press Off for Continuous Play, On for Programming. See Page 11.

Output Level

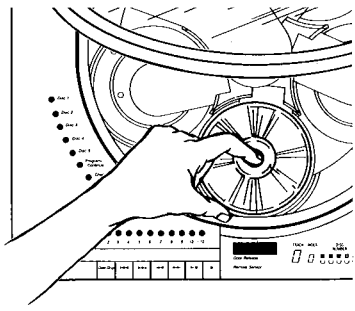
(TL8600 only.) Turn to adjust output level.

Headphone Jack

(TL8600 only.) Plug in headphones, if desired.



OPERATING INSTRUCTIONS



Playing Discs - Basic Operation

Load the disc(s).

1. Press the Power Switch on, then press the Door Release button to raise the dustcover.
2. With your index or middle finger in the disc's center hole and your thumb on its edge, place a disc, label side up, in any of the five numbered trays.
3. Repeat to fill as many of the trays as you wish. To rotate the carousel for loading, turn it manually or press the Disc Skip button.

Press play.

Your unit will play each disc, from beginning to end, starting with the disc you have placed in the lowest numbered tray.

In this "Continuous Mode" it is possible to vary the sequence in which tracks — and discs — are played, using the front and top panel control buttons as described below. Alternatively, you may play the unit in "Program Mode," as described on Page 11.

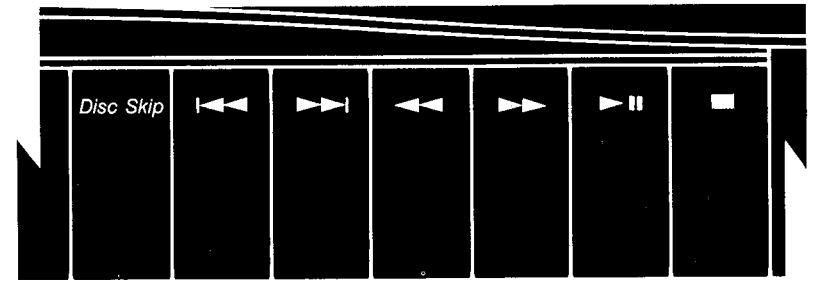
Using the Panel Controls

Selecting a desired track.

Note the tray number of the disc you wish to hear, and press the corresponding numbered "Disc" button on the top of the unit. Disc will be played beginning with the first track. A new disc may be selected with the unit in Stop, Play or Pause mode.

Alternatively, with the unit in Play or Pause mode, you can advance to the next disc in sequence, by pressing the Disc Skip button. If unit was in Play, the next disc in sequence will begin playing from beginning to end. If unit was in Pause, it will remain in Pause at the beginning of the new disc.

(When unit is in Stop mode, Disc Skip advances the carousel exactly one tray, whether or not the tray contains a disc. This function is used in loading discs into the carousel.)



Selecting a desired track.

To begin playing any desired track, press the corresponding numbered button on the top of the unit (TL8600 only) or on the Remote Control. For tracks numbered 11, 12, 13, etc., press the "+10" button, followed by 1, 2, 3, etc. For track 20, press the "+10" button, and then press 10.

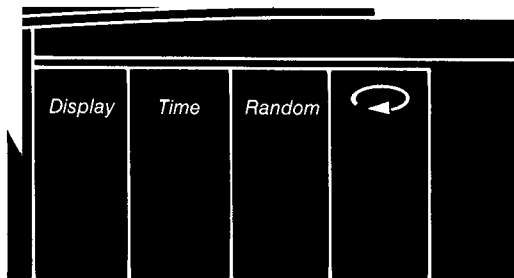
A track may be selected in this manner with the unit in Play or Pause (or immediately after selecting a Disc number). After the selected track has been played, the unit will continue to play subsequent tracks in numerical sequence.

Alternatively, with the unit in Play or Pause mode, you may use the Skip Reverse and Skip Forward buttons (I◀◀ and ▶▶I) as follows:

To return rapidly to the start of the current track, press I◀◀ once. To move the start of a previous track, repeat pressing I◀◀.

To skip forward to the start of the next track, press ▶▶I. Repeat pressing ▶▶I to move to the start of subsequent tracks.

When used in Program Mode, I◀◀ and ▶▶I skip from track to track in the sequence that has been stored in memory.



Locating a specific point on a disc.

With unit in Play or Pause mode, press and hold the Manual Search buttons (◀◀ and ▶▶) to move rapidly forward (▶▶) or backward (◀◀) on a disc. Use the Track and/or Time display to locate the desired point.

When ◀◀ is pressed and held, the unit will reverse as far as the start of the first track on the current disc and will revert to Play (or Pause) mode. When ▶▶ is pressed and held, the disc will advance as far as the end of the current disc and stop. Or, if there is a disc in a subsequent tray, the unit will move to the first track of this disc and revert to Play (or Pause).

In Program or Random Mode, pressing ◀◀ or ▶▶ moves the disc only as far as the beginning of the current track, or the start of the next track.

Playing tracks at random.

When the Random button is pressed On ("Random" lights on the front display), the disc changer selects a disc at random from those in the carousel, then plays a randomly selected track from that disc. At the conclusion of this track, a different track from the same disc is randomly selected and played. When all tracks on the disc have been played, the unit randomly selects from the remaining discs in the carousel and again begins playing tracks at random.

If Random is turned off during play, the unit will revert to playing tracks (and discs) in sequence, beginning from the track that is currently playing.

When the Random feature is activated with the unit in Program Mode, the disc changer chooses randomly only among the programmed discs and tracks.

Repeating discs, tracks, or segments.

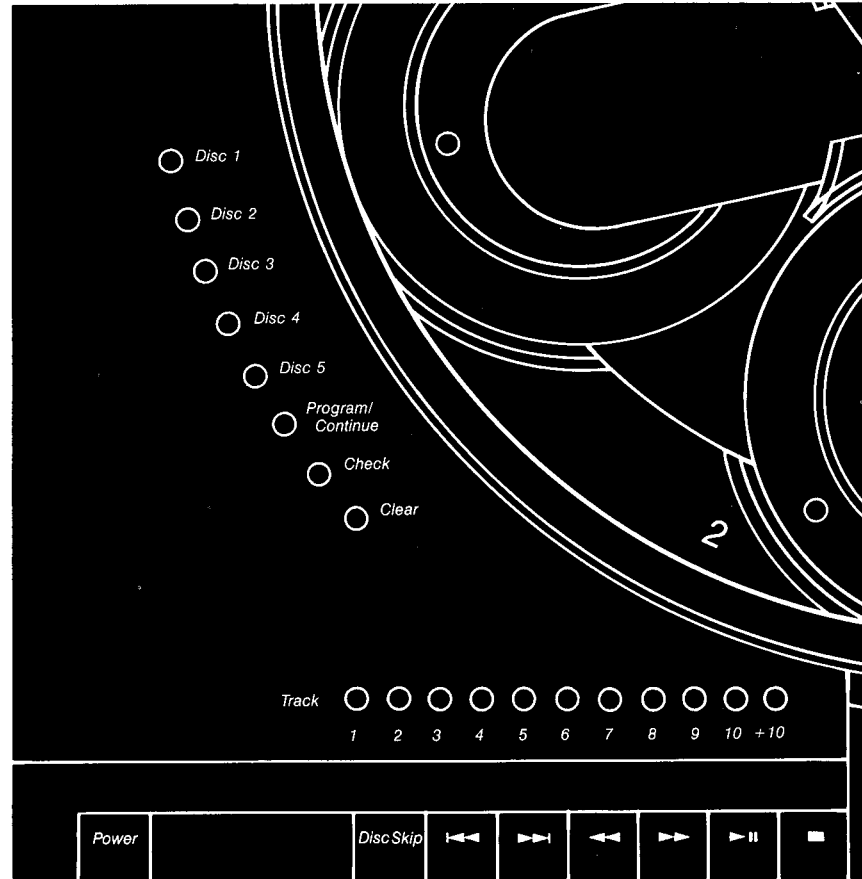
To turn Repeat on, either before or during play, press the button marked ↻. ("Repeat" lights up on the front panel display.) With Repeat on, at the conclusion of the last track of the last disc in the changer, the player returns to the first disc in sequence. The CD changer will play continuously in this manner until Repeat is turned off by again pressing the ↻ button.

In Program Mode, the player repeats only the programmed sequence. If you wish to hear a single track repeatedly, for example, simply program the changer for this one track and press Repeat.

It is also possible, by using the Repeat A-B function on the Remote Control, to repeat any specific designated segment. See Page 6.



OPERATING INSTRUCTIONS



Programming

Storing a sequence of tracks in memory.

1. Load discs in changer and press the Program/Continue button on the top of the unit. ("Program" will light up on the display.)
2. Select the disc you wish to hear first, by pressing the corresponding numbered Disc button.
3. Select the specific track you wish to hear by pressing the corresponding numbered Track button on the top of the unit (TL8600 only) or on the Remote Control. To select additional tracks from this disc, continue pressing the corresponding numbered buttons, in the order you wish the tracks to be played. If you wish to play all tracks on the disc, press Program/Continue directly after pressing the numbered Disc button.

Alternatively, you may select tracks using the ◀◀ and ▶▶ buttons. Simply skip forward or back to the desired track number, then press Program/Continue to enter your choice. Repeat this process to enter additional selections.

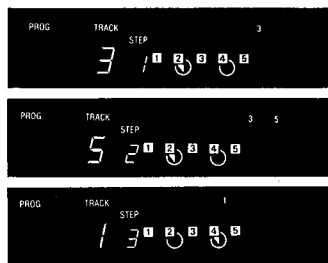
- To select track(s) from a different disc, press the corresponding numbered Disc button. Then select the desired track(s) as described in Step 3.

When you press Play, tracks will be played in the order programmed. You may continue to add tracks into memory while the current selections are playing. Up to 30 items per disc may be stored in memory.

Checking your program.

When the Check button is first pressed, "Step 1" lights up on the display panel, as well as the disc and track numbers of the first item stored in memory. (See diagram below.)

Each time the Check button is pressed, the next item in memory is displayed for your review.



Clearing items from memory.

To clear the entire program, place the unit in Stop and in Program Mode; then press Stop again. Turning the Power off will also erase your program.

To clear the last item entered in memory (with the unit in Stop), simply press the Clear button.

To clear any desired track from memory, in Play or in Stop mode, use the Check button to display the desired track; then press Clear to erase that track.

To return to Continuous Mode, place the unit in Stop and press Program/Continue. (Placing the unit in Continuous Mode does not erase program contents.)



TROUBLESHOOTING

If you have a problem with your CD changer, please check this list for a possible solution. If the problem persists, consult your authorized Harman Kardon service center.

If the problem is:

Make sure that:

No lights illuminate when Power Switch is pressed.

- The unit is plugged into a live outlet.

Panel lights up, but the unit does not play.

- Disc(s) have been loaded label side up.
- Moisture has not formed inside the unit. Leave unit turned on at room temperature for 30 minutes; then play your disc.
- The transport has been unlocked.

"Play" lights on display panel, but no sound is heard.

- Correct source has been selected on your receiver/pre-amplifier/integrated amplifier.
- Output Level control is turned up (or CD changer is connected through Fixed output jacks). (TL8600 only.)
- Hookup cables are properly connected.

Sound skips or stutters during playback.

- Disc is clean and undamaged.
- Unit is placed on a firm, level surface.
- Unit is placed far enough from speakers to avoid vibration.

Sound is continuously distorted.

- Cables are plugged into CD or AUX jacks, not into PHONO jacks, on your receiver/pre-amplifier/integrated amplifier.

About radio/TV interference:

This CD player generates and uses radio frequency energy, and if it is not installed and used properly (according to the instructions in this manual), may cause interference to radio or television reception. The unit has been type tested and found to comply with the limits for Class B computing devices in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

If this unit does cause interference to radio or television reception (which can be determined by turning the unit on and off), try to correct the interference by one of the following measures:

- Reorient the receiving antenna of the radio or TV.
- Relocate the CD player with respect to the radio or TV or move the CD player away from the radio or TV.
- Plug the CD player into a different outlet so that the CD player and radio or TV are on different branch circuits.

If necessary, consult your dealer or an experienced radio/television technician for additional suggestions. The following booklet prepared by the Federal Communications Commission may be helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet, stock number 004-000-00345-4, is available from the US Government Printing Office, Washington, D.C., 20402.

SPECIFICATIONS

Carousel CD Changers

System:	
D/A Converter:	
Error Correction:	
Low Level Linearity:	
Frequency Response:	
Total Harmonic Distortion(THD):	
Dynamic Range:	
Signal-to-Noise Ratio:	
Channel Separation:	
Line Output Level/Impedance:	
Power Consumption:	
Dimensions (W x H x D) :	
Weight:	

TL8600

Compact Disc Digital Audio
Dual, Linear, Pulse Width Modulated Bit Stream. Clock Rate: 33.8688MHz (33,868.8kHz)
CIRC System
± 0.2dB @ -90dB
4Hz-20kHz + 0dB/-0.2dB
0.003%
98dB
104dB
96dB
2.0V @ 10kΩ
20 Watts
17-3/8" x 4" x 16-1/8" 443mm x 100mm x 410mm
14.9 lb/6.8 kg

TL8500

Compact Disc Digital Audio
Dual, Linear, Pulse Width Modulated Bit Stream. Clock Rate: 33.8688MHz (33,868.8kHz)
CIRC System
± 0.2dB @ -90dB
4Hz-20kHz + 0dB/-0.2dB
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98dB
104dB
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2.0V @ 10kΩ
20 Watts
17-3/8" x 4" x 16-1/8" 443mm x 100mm x 410mm
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