



## Operation Manual



## CP660

**Obtaining Other Language Versions:** To obtain information in another language about the use of this product, please contact your local Crown Distributor. If you need assistance locating your local distributor, please contact Crown at 574-294-8000.

This manual does not include all of the details of design, production, or variations of the equipment. Nor does it cover every possible situation which may arise during installation, operation or maintenance.

The information provided in this manual was deemed accurate as of the publication date. However, updates to this information may have occurred. To obtain the latest version of this manual, please visit the Crown website at [www.crownaudio.com](http://www.crownaudio.com).

**Trademark Notice:** Crown, Crown Audio, and Amcron are registered trademarks of Crown International. Other trademarks are the property of their respective owners.

**Some models may be exported under the name Amcron®**

## Important Safety Instructions

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water. Do not expose to dripping or splashing. Do not place objects filled with liquid on unit.
- 6) Clean only with a dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with a cart, stand, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- 15) To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

TO PREVENT ELECTRIC SHOCK DO NOT REMOVE TOP OR BOTTOM COVERS. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



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

À PRÉVENIR LE CHOC ÉLECTRIQUE N'ENLEVEZ PAS LES COUVERCLES. IL N'Y A PAS DES PARTIES SERVICEABLE À L'INTÉRIEUR. TOUS REPARATIONS DOIT ÊTRE FAIRE PAR PERSONNEL QUALIFIÉ SEULEMENT.



**AVIS**  
RISQUE DE CHOC ÉLECTRIQUE  
N'OUVREZ PAS

### IMPORTANT

The CP660 amplifier requires Class 2 output wiring.



### MAGNETIC FIELD

CAUTION! Do not locate sensitive high-gain equipment such as preamplifiers or tape decks directly above or below the unit. Because this amplifier has a high power density, it has a strong magnetic field which can induce hum into unshielded devices that are located nearby. The field is strongest just above and below the unit.



If an equipment rack is used, we recommend locating the amplifier(s) in the bottom of the rack and the preamplifier or other sensitive equipment at the top.

### WATCH FOR THESE SYMBOLS:

The lightning bolt triangle is used to alert the user to the risk of electric shock.



The exclamation point triangle is used to alert the user to important operating or maintenance instructions.



## FCC COMPLIANCE NOTICE

This device complies with part 15 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 interference that may cause undesired operation.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



Crown International, Inc.

**DECLARATION OF CONFORMITY**

**Issued By:** Crown International, Inc.  
1718 W. Mishawaka Rd.  
Elkhart, IN 46517 U.S.A.

FOR COMPLIANCE QUESTIONS ONLY: Sue Whitfield  
574-294-8289  
swhitfield@crowintl.com

**European Representative's Name and Address:**

Nick Owen  
35, Bassets Field  
Thornhill  
Cardiff, South Glamorgan  
CF14 9UG United Kingdom

**Equipment Type:** Commercial Audio Power Amplifiers

**Family Name:** CP Family

**Model Names:** CP660

**EMC Standards:**

**EN 55103-1:1995** Electromagnetic Compatibility - Product Family Standard for Audio, Video, Audio-Visual and Entertainment Lighting Control Apparatus for Professional Use, Part 1: Emissions

**EN 55103-1:1995** Magnetic Field Emissions-Annex A @ 10 cm and 1 M

**EN 61000-3-2:1995+A14:2000** Limits for Harmonic Current Emissions (equipment input current  $\leq 16A$  per phase)

**EN 61000-3-3:1995** Limitation of Voltage Fluctuations and Flicker in Low-Voltage Supply Systems Rated Current  $\leq 16A$

**EN 55022:1992 + A1: 1995 & A2:1997** Limits and Methods of Measurement of Radio Disturbance Characteristics of ITE: Radiated, Class B Limits; Conducted, Class B

**EN 55103-2:1996** Electromagnetic Compatibility - Product Family Standard for Audio, Video, Audio-Visual and Entertainment Lighting Control Apparatus for Professional Use, Part 2: Immunity

**EN 61000-4-2:1995** Electrostatic Discharge Immunity (Environment E2-Criteria B, 4k V Contact, 8k V Air Discharge)

**EN 61000-4-3:1996** Radiated, Radio-Frequency, Electromagnetic Immunity (Environment E2, Criteria A)

**EN 61000-4-4:1995** Electrical Fast Transient/Burst Immunity (Criteria B)

**EN 61000-4-5:1995** Surge Immunity (Criteria B)

**EN 61000-4-6:1996** Immunity to Conducted Disturbances Induced by Radio-Frequency Fields (Criteria A)

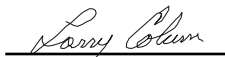
**EN 61000-4-11:1994** Voltage Dips, Short Interruptions and Voltage Variation

**Safety Standard:**

**EN 60065: 1998** Safety Requirements - Audio Video and Similar Electronic Apparatus

I certify that the product identified above conforms to the requirements of the EMC Council Directive 89/336/EEC as amended by 92/31/EEC, and the Low Voltage Directive 73/23/EES as amended by 93/68/EEC.

Signed



Larry Coburn

Title: Senior Vice President of Manufacturing

Date of Issue: January 1, 2001

## Table of Contents

Important Safety Instructions .....	2	3.7 Connect to AC Mains .....	9
Declaration of Conformity .....	3	3.8 Startup Procedure .....	9
<b>1 Welcome .....</b>	<b>5</b>	<b>4 Operation .....</b>	<b>9</b>
1.1 Features .....	5	4.1 Precautions .....	9
1.2 Unpacking Your Amplifier .....	5	4.2 Front Panel Controls and Indicators .....	10
<b>2 How to Use This Manual .....</b>	<b>5</b>	4.3 Back Panel Controls and Connectors .....	11
<b>3 Setup .....</b>	<b>6</b>	<b>5 Troubleshooting .....</b>	<b>12</b>
3.1 Unpack Your Amplifier .....	6	<b>6 Specifications .....</b>	<b>13</b>
3.2 Install Your Amplifier .....	6	<b>7 Service .....</b>	<b>15</b>
3.3 Ensure Proper Cooling .....	6	7.1 International and Canada Service .....	15
3.4 Choose Input Wire and Connectors .....	7	7.2 US Service .....	15
3.5 Choose Output Wire and Connectors .....	7	7.2.1 Service at a US Service Center .....	15
3.6 Wire Your System .....	8	7.2.2 Factory Service .....	15
3.6.1 Stereo Mode .....	8	7.2.3 Factory Service Shipping Instructions .....	15
3.6.2 Bridge-Mono Mode .....	8	7.2.4 Packing Instructions .....	15
		7.2.5 Estimate Approval .....	15
		7.2.6 Payment of Non-Warranty Repairs .....	15
		<b>8 Warranty .....</b>	<b>16</b>
		Factory Service Information Form .....	19



CP660	*1 kHz Power	
	4-Ohm	8-Ohm
<b>Six-Channel Mode</b>		
1 Channel / 1 Load	<b>130W</b>	<b>90W</b>
4 Channels / 4 Loads	<b>100W</b>	<b>70W</b>
6 Channels / 6 Loads	<b>75W</b>	<b>60W</b>
<b>Bridge Mode</b>		
2 Channels / 1 Load	<b>250W</b>	
4 Channels / 2 Loads	<b>200W</b>	
6 Channels / 3 Loads	<b>150W</b>	

\*1 kHz Power: refers to maximum average power in watts at 1 kHz with 0.3% THD.

## 1 Welcome

Congratulations on your purchase of a Crown® CP660 six-channel power amplifier. The CP660 has been designed to give you super flexibility and the best watts-to-dollar ratio around. With six independent channels, the CP660 takes the place of three, two channel amplifiers, yet still fits in a standard two-rack space. Its 75 watts average output per channel\* is ideal for a variety of surround-sound uses, as well as many paging, zoning, and background music applications. Plus, when you need it, you can easily bridge any pair of consecutive channels for double the power.

In addition, CP660 amplifier includes a number of features which require some explanation before they can be used to their maximum advantage.

Please take the time to study this manual so that you can obtain the best possible service from your amplifier.

\* 6 channels into 4-ohm loads.

### 1.1 Features

- Built for maximum flexibility, with the best watts-to-dollars ratio around.
- Six independent amplifier channels to suit a wide range of applications.
- Six independent level controls on the back panel allow convenient level balancing of all channels.

- Three Dual/Mono switches on the back panel give a broad range of flexibility in configuring your system.
- High-quality, standard-spaced double banana-jack/binding-post output connections facilitate any type of speaker connection, including heavy-gauge wire.
- Super-quiet, variable-speed fan with auto trigger for silent, effective cooling.
- Compact design is rack-mountable in two rack spaces (31/2 inches/89 mm).
- The best Three-Year “No-Fault” Fully Transferable Warranty in the business. It even covers round-trip ground shipping in the U.S. for all warranty work.

### 1.2 Unpacking Your Amplifier

Please unpack and inspect your amplifier for any damage that may have occurred during transit. If damage is found, notify the transportation company immediately. Only you can initiate a claim for shipping damage. Crown will be happy to help as needed. Save the shipping carton as evidence of damage for the shipper's inspection.

We also recommend that you save all packing materials so you will have them if you ever need to transport the unit. **Never ship the unit without the factory pack.**

## 2 How to Use This Manual

This manual provides you with the necessary information to safely and correctly setup and operate your amplifier. It does not cover every aspect of installation, setup or operation that might occur under every condition. For additional information, please consult Crown's *Amplifier Application Guide* (available online at [www.crownaudio.com](http://www.crownaudio.com)), Crown Tech Support, your system installer or retailer.

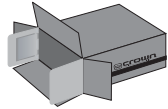
We strongly recommend you read all instructions, warnings and cautions contained in this manual. Also, for your protection, please send in your warranty registration card today. And save your bill of sale—it's your official proof of purchase.

## 3 Setup

### 3.1 Unpack Your Amplifier

YOU WILL NEED (not supplied):

- Input wiring cables
- Output wiring cables
- Rack for mounting amplifier (or a stable surface for stacking)



**WARNING:** Before you start to set up your amplifier, make sure you read and observe the Important Safety Instructions found at the beginning of this manual.



### 3.2 Install Your Amplifier

**CAUTION:** Before you begin, make sure your amplifier is disconnected from the power source, with power switch in the "off" position and all level controls turned completely down (counterclockwise).

Use a standard 19-inch (48.3 cm) equipment rack. See Figure 3.1 for amplifier dimensions.

You may also stack amps without using a cabinet.

NOTE: When transporting, amplifiers should be supported at both front and back.

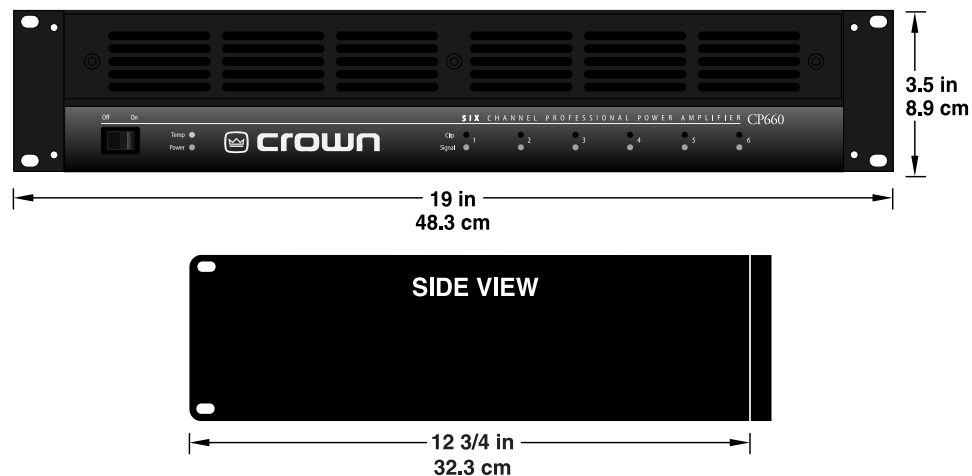


Figure 3.1 Dimensions

### 3.3 Ensure Proper Cooling

When using an equipment rack, mount units directly on top of each other. Close any open spaces in rack with blank panels. DO NOT block side or front air vents.

Figure 3.2 illustrates standard amplifier airflow.

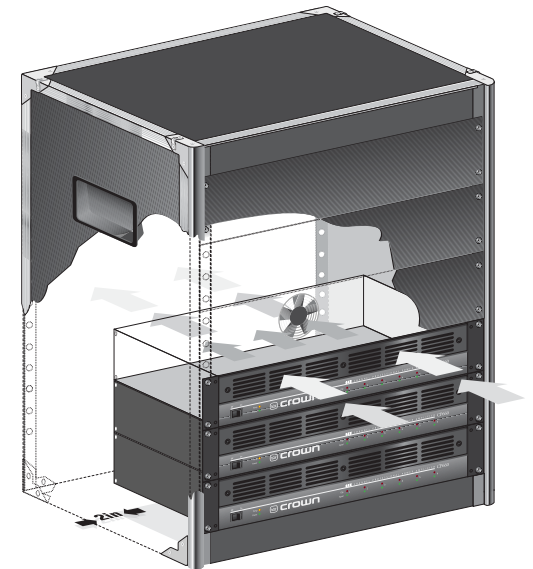


Figure 3.2 Airflow

### 3 Setup

#### 3.4 Choose Input Wire and Connectors

Crown recommends using pre-built or professionally wired, balanced line (two-conductor plus shield), 22-24 gauge cables with 6 AWG terminal forks, less than 0.31 inch (7.8 mm) wide. Unbalanced line may also be used but may result in noise over long cable runs.

Refer to Figure 3.3 for correct connector pin assignments.

**NOTE: Custom wiring should only be performed by qualified personnel.**

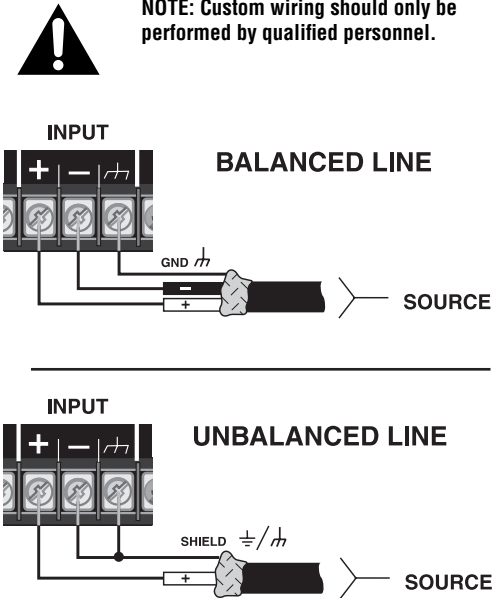


Figure 3.3 Input Connector Wiring

#### 3.5 Choose Output Wire and Connectors

Crown recommends using pre-built or professionally wired, high-quality, two- or four-conductor, heavy gauge speaker wire and connectors. You may use banana plugs, spade lugs or bare wire for your output connectors (see Figure 3.4). To prevent the possibility of short-circuits, wrap or otherwise insulate exposed loudspeaker cable connectors.

Using the guidelines below, select the appropriate size of wire based on the distance from amplifier to speaker.

Distance	Wire Size
up to 25 ft.	16 gauge
26-40 ft.	14 gauge
41-60 ft.	12 gauge
61-100 ft.	10 gauge
101-150 ft.	8 gauge
151-250 ft.	6 gauge



**CAUTION: Never use shielded cable for output wiring.**

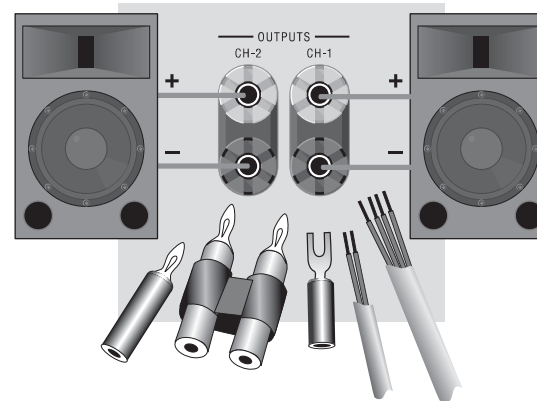


Figure 3.4 Output Connector Wiring

## 3 Setup

### 3.6 Wire Your System

#### 3.6.1 Stereo Mode

Typical input and output wiring is shown in Figure 3.6.

**INPUTS:** Connect input wiring for each channel. Maintain proper polarity (+/-) on input connectors.

**OUTPUTS:** Maintain proper polarity (+/-) on output connectors.

Connect Channel 1 positive (+) speaker load to Channel 1 positive (red) terminal of amp; repeat for negative (-). Repeat each channel wiring as for Channel 1.

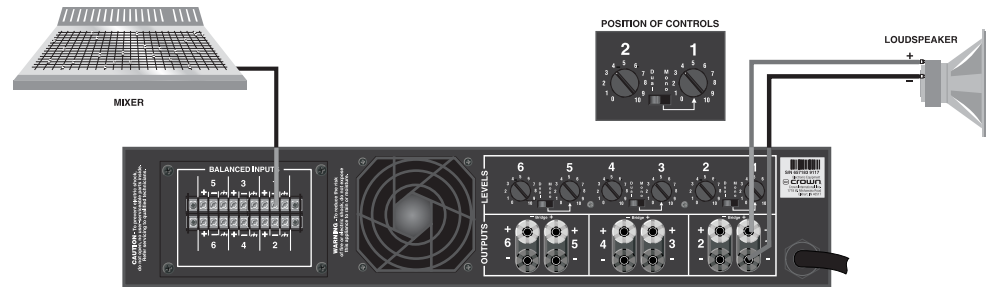


Figure 3.6. System Wiring, Stereo Mode

#### 3.6.2 Bridge-Mono Mode

Typical input and output wiring is shown in Figure 3.7.

**INPUTS:** Connect input wiring to lower-numbered channel only for each channel pair.

**NOTE:** Crown provides a reference of wiring pin assignments for commonly used connector types in the *Crown Amplifier Application Guide* (Section 1.21.) available at [www.crownaudio.com](http://www.crownaudio.com).

**OUTPUTS:** Connect the speaker across the red binding post of each channel pair. Do not use the black binding posts of the channel pair when the pair is being operated in Bridge-Mono mode.

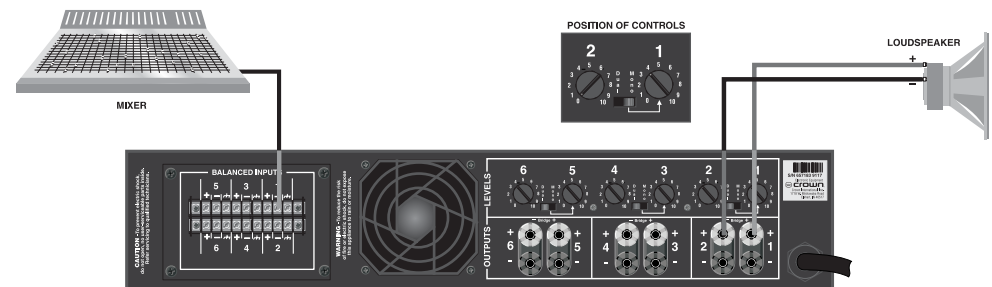


Figure 3.7. System Wiring, Bridge-Mono Mode



**NOTE:** Set the level control for the higher-numbered channel of the channel pair to zero (0) when operating the channel pair in Bridge-Mono mode, as the lower-numbered level control works both channels.



## 3 Setup

### 3.7 Connect to AC Mains

Connect your amplifier to the AC mains power source (power outlet) with the supplied AC power cordset. First, connect the IEC end of the cordset to the IEC connector on the amplifier; then, plug the other end of the cordset to the AC mains.

NOTE: The third prong of this connector (ground) is an important safety feature. Do not attempt to disable this ground connection by using an adapter or other methods.

Amplifiers don't create energy. The AC mains voltage and current must be sufficient to deliver the power you expect. You must operate your amplifier from an AC mains power source with not more than 10% variation above or below the amplifier's specified line voltage and within the specified frequency requirements (indicated on the amplifier's back panel label). If you are unsure of the output voltage of your AC mains, please consult your electrician.

### 3.8 Startup Procedure

Use the following procedure when first turning on your amplifier:

1. Turn down the level of your audio source.
2. Turn down the level controls of the amplifier.
3. Turn on the "Power" switch. The Power indicator should glow.
4. Turn up the level of your audio source to an optimum level.
5. Turn up the Level controls on the amplifier until the desired loudness or power level is achieved.
6. Turn down the level of your audio source to its normal range.



If you ever need to make any wiring or installation changes, **don't forget to disconnect the power cord.**

**For help with determining your system's optimum gain structure (signal levels) please refer to the *Crown Amplifier Application Guide*, available online at [www.crownaudio.com](http://www.crownaudio.com).**

## 4 Operation

### 4.1 Precautions

Your CP660 amplifier is protected from internal and external faults, but you should still take the following precautions for optimum performance and safety:

1. Before use, your amplifier first must be configured for proper operation, including input and output wiring hookup. Improper wiring can result in serious operating difficulties. For information on wiring and configuration, please consult the Setup section of this manual or, for advanced setup techniques, consult Crown's *Amplifier Application Guide* available online at [www.crownaudio.com](http://www.crownaudio.com).
2. Use care when making connections, selecting signal sources and controlling the output level. The load you save may be your own!
3. Do not short the ground lead of an output cable to the input signal ground. This may form a ground loop and cause oscillations.

4. **Never connect the output to a power supply, battery or power main. Electrical shock may result.**



5. Tampering with the circuitry, or making unauthorized circuit changes may be hazardous and invalidates all agency listings.
6. **Do Not** operate the amplifier with the red Clip LEDs constantly flashing.
7. **Do Not** overdrive the mixer, which will cause clipped signal to be sent to the amplifier. Such signals will be reproduced with extreme accuracy, and loud-speaker damage may result.
8. **Do Not** operate the amplifier with less than the rated load impedance. Due to the amplifier's output protection, such a configuration may result in premature clipping and speaker damage.

*Remember: Crown is not liable for damage that results from overdriving other system components.*

## 4 Operation

### 4.1 Front Panel Controls and Indicators

#### A. Temp Indicator

Red LED illuminates when the temperature of the amplifier gets too high and the fan is in full-speed operation mode.

#### B. Clip Indicators

Yellow LEDs illuminate when the channel's output signal is being overdriven.

#### C. Power Switch

Amplifier is on when the switch is in the On (right) position.

#### D. Power Indicator

Green LED indicates amplifier has been turned on and AC power is available.

#### E. Signal Indicators

Green LEDs illuminate to indicate the presence of signal at the corresponding channel's output.

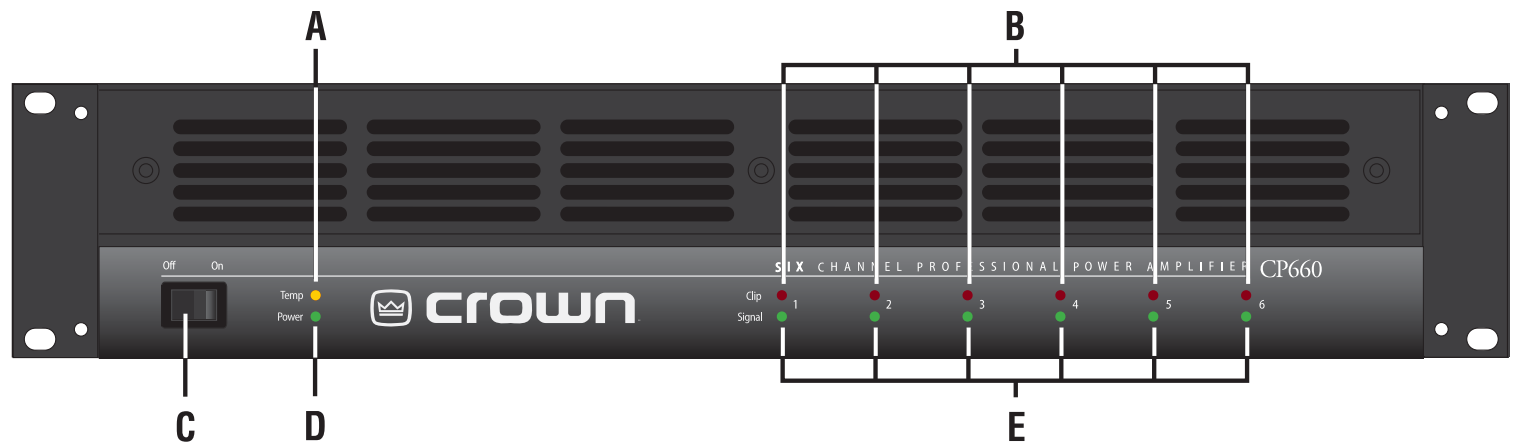


Figure 4.1 Front Panel Controls and Indicators

## 4 Operation

### 4.3 Back Panel Controls and Connectors

**F. Balanced Barrier Block Inputs**  
One set of screw-terminal Barrier Block input connectors are provided for each channel.

**G. Dual/Mono Switch**  
Two-position switch, one per channel pair, sets the channel pair for either Dual or Bridge-Mono operation.

**H. Level Controls**  
Rotary level controls, one per channel.

**I. 5-Way Binding Post Output Jacks**  
One pair per channel; accept banana plugs, spade lugs or bare wire. (European models do not accept banana plugs.)

**J. Power Cord**

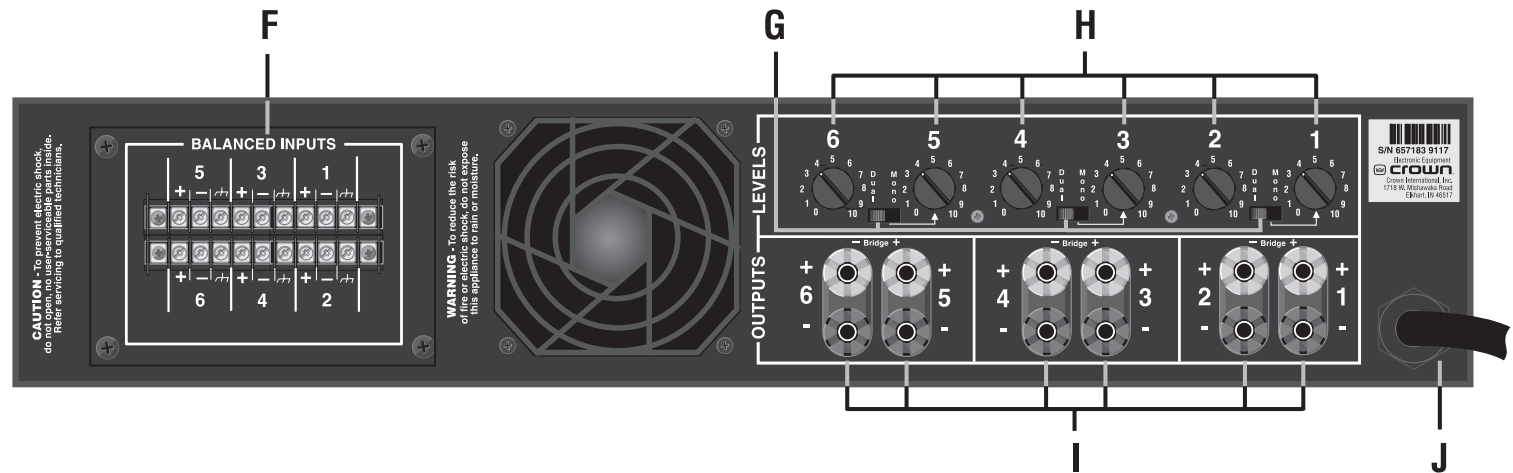
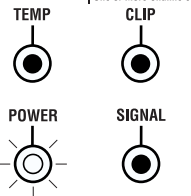


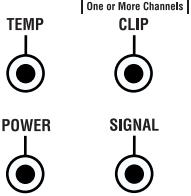
Figure 4.2 Back Panel Controls and Connectors

## 5 Troubleshooting

TEMP	[ One or More Channels ] CLIP	<b>CONDITION: Normal operation.</b> <b>POSSIBLE REASON:</b> <ul style="list-style-type: none"> <li>This is normal operation for your amp.</li> </ul>
POWER	SIGNAL	



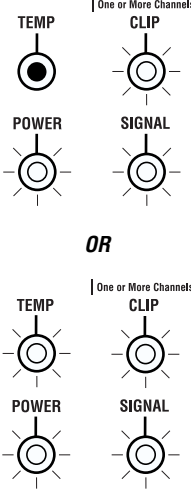
TEMP	[ One or More Channels ] CLIP	<b>CONDITION: No power to the amplifier.</b> <b>POSSIBLE REASON:</b> <ul style="list-style-type: none"> <li>The amplifier's "power" switch is off.</li> <li>The amplifier is not plugged into the power receptacle.</li> <li>The amplifier's high-voltage power supply fuse has blown. Fuse NOT user-replaceable. Return amp to Crown or an authorized Crown Service Center for servicing.</li> </ul>
POWER	SIGNAL	



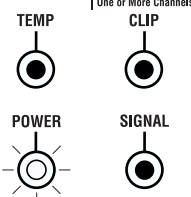
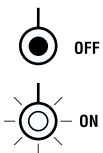
TEMP	[ One or More Channels ] CLIP	<b>CONDITION: Distorted sound.</b> <b>POSSIBLE REASON:</b> <ul style="list-style-type: none"> <li>Input signal level is too high. Turn down your amplifier level controls. NOTE: Your amplifier should never be operated at a level which causes the Clip LEDs to illuminate constantly.</li> <li>Amplifier is too hot. Turn down input signal level to allow amplifier to return to normal operating temperature. Check speaker loads for short-circuits or too low impedance level.</li> </ul>
POWER	SIGNAL	

**OR**

TEMP	[ One or More Channels ] CLIP	<b>CONDITION: Distorted sound.</b> <b>POSSIBLE REASON:</b> <ul style="list-style-type: none"> <li>Amplifier is too hot. Turn down input signal level to allow amplifier to return to normal operating temperature. Check speaker loads for short-circuits or too low impedance level.</li> </ul>
POWER	SIGNAL	



TEMP	[ One or More Channels ] CLIP	<b>CONDITION: No sound.</b> <b>POSSIBLE REASON:</b> <ul style="list-style-type: none"> <li>The amplifier has just been turned on and is still in the 4-second turn-on delay.</li> <li>No input signal.</li> <li>Input signal level is very low.</li> <li>Level controls are turned down.</li> <li>Speakers not connected.</li> </ul>
POWER	SIGNAL	


**KEY**


**Note: For further assistance with troubleshooting your amplifier, consult the Crown Amplifier Application Guide, available from the Crown website at [www.crownaudio.com](http://www.crownaudio.com), or contact the Crown Technical Support Group.**

## 6 Specifications

### Minimum Guaranteed Power (watts), 120 VAC, 60 Hz

Dual Mode, 1 channel / 1 load

#### 1 kHz with <0.3% THD

4 ohm (per ch.)	130
8 ohm (per ch.)	90

#### Dual Mode, 4 channels / 4 loads

#### 1 kHz with 0.3% THD

4 ohm (per ch.)	100
8 ohm (per ch.)	70

#### Dual Mode, 6 channels / 6 loads

#### 1 kHz with 0.3% THD

4 ohm (per ch.)	75
8 ohm (per ch.)	60

#### Bridge-Mono Mode, 2 channels / 1 load

#### 1 kHz with 0.3% THD

8 ohm (per ch.)	250
-----------------	-----

#### Bridge-Mono Mode, 4 channels / 2 loads

#### 1 kHz with 0.3% THD

8 ohm (per ch.)	200
-----------------	-----

#### Bridge-Mono Mode, 6 channels / 3 loads

#### 1 kHz with 0.3% THD

8 ohm (per ch.)	150
-----------------	-----

#### Sensitivity (volts RMS)

for full rated power at 8 ohms	0.7
--------------------------------	-----

Frequency Response (at 1 watt) 20Hz - 20kHz	+0/-1 dB (see Figure 6.1)
---	---------------------------

Phase Response (degrees at 1 watt) 20Hz to 10kHz	±15 (see Figure 6.2)
--	----------------------

#### Signal to Noise Ratio

A-weighted, below 8-ohm rated power	> 100 dB
-------------------------------------	----------

#### Total Harmonic Distortion (THD)

at 8-ohm rated power, 1 kHz, True THD	< 0.3%
---------------------------------------	--------

#### Intermodulation Distortion (IMD)

60 Hz and 7 kHz at 4:1, from 8-ohm rated output to -35 dB	< 0.25%
---	---------

Damping Factor (8 ohm) 20Hz to 400Hz	> 250
--------------------------------------	-------

DC Output Offset (shorted input)	< ±50 millivolts
----------------------------------	------------------

#### Input Impedance, nominal balanced, unbalanced

20 k ohms, 10 k ohms

#### Load Impedance (rated)

Note: Safe with all types of loads.

Stereo	4-8 ohms
Bridge-Mono	8 ohms

## 6 Specifications

### Performance (continued)

#### AC Power Requirements

120V, 60Hz Units, Amps (typical)	6.5
240V, 50Hz Units, Amps (typical)	3.3
100V, 50Hz Units, Amps (typical)	7.8

### Protection

**General** Protected against shorted, open or mismatched loads; overloaded power supplies; excessive temperature; chain destruction phenomena; input overload damage and high-frequency blowups. Amplifier also protects loudspeakers from input/output DC and turn-on/turn-off transients.

**Turn On** Four-second delay prevents turn-on transients.

### Construction

**Ventilation** Flow-through ventilation from front to back.

**Cooling** Variable-speed fan with auto-trigger.

#### Dimensions

<b>Width</b>	EIA Standard 19-inch rack mount (EIA RS-310-B);
<b>Height</b>	3.5 inch (8.9 cm)
<b>Depth (behind mounting surface)</b>	12.75 inch (32.3 cm).

### Weight

**Center of Gravity** (see Figure 6.3)

<b>Behind Front Mounting Surface</b>	6 inch (15.2 cm)
<b>From Outer-Edge of Left Rack Ear</b>	7 inch (17.8 cm)

**Net Weight** 30 lbs. (13.0 kg)

**Shipping Weight** 37 lbs. (17 kg)

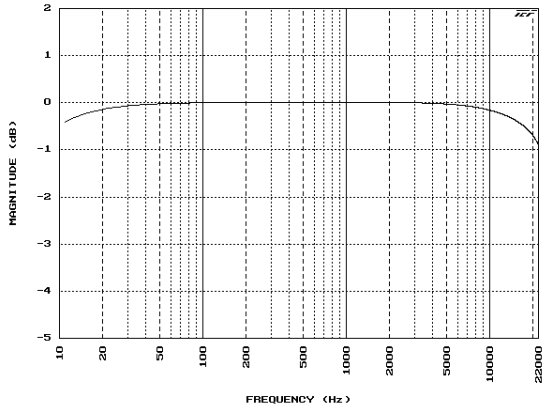


Figure 6.1 Frequency Response

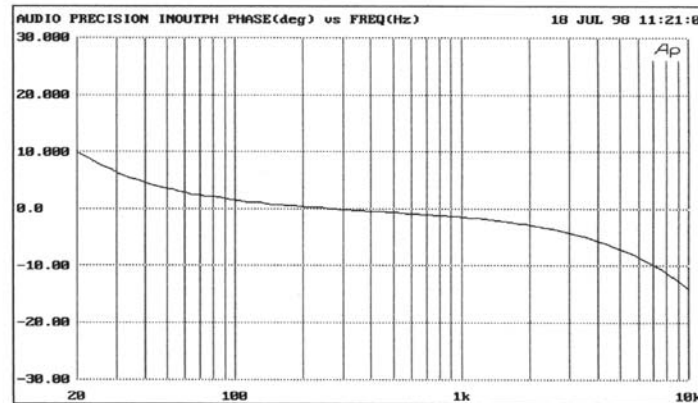


Figure 6.2 Phase Response

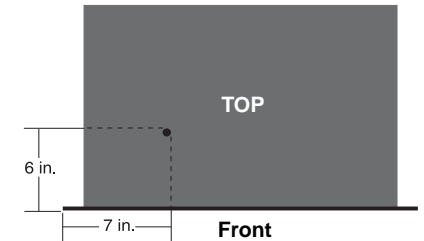


Figure 6.3 Center of Gravity

## 7 Service

Crown amplifiers are quality units that rarely require servicing. Before returning your unit for service, please contact Crown Technical Support to verify the need for servicing.

This unit has very sophisticated circuitry which should only be serviced by a fully trained technician. This is one reason why each unit bears the following label:

**CAUTION: To prevent electric shock, do not remove covers. No user serviceable parts inside. Refer servicing to a qualified technician.**



Complete the Crown Audio Factory Service Information form, in the back of this manual, when returning a Crown product to the factory or authorized service center. The form must be included with your product inside the box or in a packing slip envelope securely attached to the outside of the shipping carton. Do not send this form separately.

### 7.1 International and Canada Service

Service may be obtained from an authorized service center. (Contact your local Crown/Amcron representative or our office for a list of authorized service centers.) To obtain service, simply present the bill of sale as proof of purchase along with the defective unit to an authorized service center. They will handle the necessary paperwork and repair.

Remember to transport your unit in the original factory pack.

### 7.2 US Service

Service may be obtained in one of two ways: from an authorized service center or from the factory. You may choose either. It is important that you have your copy of the bill of sale as your proof of purchase.

#### 7.2.1 Service at a US Service Center

This method usually saves the most time and effort. Simply present your bill of sale along with the defective unit to an authorized service center to obtain service. They will handle the necessary paperwork and repair. Remember to transport the unit in the original factory pack. A list of authorized service centers in your area can be obtained from Crown Factory Service, or online from <http://www.crownaudio.com/support/servcent.htm>.

#### 7.2.2 Factory Service

Crown accepts no responsibility for non-serviceable product that is sent to us for factory repair. It is the owner's responsibility to ensure that their product is serviceable prior to sending it to the factory. Serviceable product list is available at <http://crownweb.crownintl.com/crownrma/>. For more information, please contact us direct.

A Service Return Authorization (SRA) is required for product being sent to the factory for repair. An SRA can be completed online at [www.crownaudio.com/support/factserv.htm](http://www.crownaudio.com/support/factserv.htm). If you do not have access to the web, please call Crown's Customer Service at 574.294.8200 or 800.342.6939 extension 8205.

For warranty service, we will pay for ground shipping both ways in the United States. Contact Crown Customer Service to obtain prepaid shipping labels prior to sending the unit. Or, if you prefer, you may prepay the cost of shipping, and Crown will reimburse you. Send copies of the shipping receipts to Crown to receive reimbursement. Your repaired unit will be returned via UPS ground. Please contact us if other arrangements are required.

#### 7.2.3 Factory Service Shipping Instructions:

1. Service Return Authorization (SRA) is required for product being sent to the factory for service. Please complete the SRA by going to [www.crownaudio.com/support/factserv.htm](http://www.crownaudio.com/support/factserv.htm). If you do not have access to our website, call 1.800.342.6939, extension 8205 and we'll create the SRA for you.
2. See packing instructions that follow.
3. Ship product to:  
CROWN AUDIO FACTORY SERVICE  
1718 W MISHAWKA RD.  
ELKHART, IN 46517
4. Use a bold black marker and write the SRA number on three sides of the box.
5. Record the SRA number for future reference. The SRA number can be used to check the repair status.

#### 7.2.4 Packing Instructions

**Important:** These instructions must be followed. If they are not followed, Crown Audio, Inc. assumes no responsibility for damaged goods and/or accessories that are sent with your unit.

1. Fill out and include the Crown Audio Factory Service Information sheet in the back of this manual.
2. Do not ship any accessories (manuals, cords, hardware, etc.) with your unit. These items are not needed to service your product. We will not be responsible for these items.
3. When shipping your Crown product, it is important that it has adequate protection. We recommend you use the original pack material when returning the product for repair. If you do not have the original box, please call Crown at 800.342.6939 or 574.294.8210 and order new pack material. See instructions for "foam-in-place" shipping pack. (Do not ship your unit in a wood or metal cabinet.)
4. If you provide your own shipping pack, the minimum recommended requirements for materials are as follows:
  - a. 275 P.S.I. burst test, Double-Wall carton that allows for 2-inch solid Styrofoam on all six sides of unit or 3 inches of plastic bubble wrap on all six sides of unit.
  - b. Securely seal the package with an adequate carton sealing tape.
  - c. Do not use light boxes or "peanuts". Damage caused by poor packaging will not be covered under warranty.

#### Using your 'foam-in-place' shipping pack

Note: The foam-in-place packing is molded so that there is only one correct position for your product.

1. Open carton and lift center cushion leaving both end-cushions in place.
2. Carefully place your product with the product's front panel facing the same direction as arrows indicate.

3. Reset center cushion down over top of product's chassis. The foam-in-place packing was molded to accommodate different chassis depth sizes. If your product's chassis does not completely fill the foam-in-place cavity, you may use a soft but solid packing material (such as paper or bubble wrap) behind the chassis.
4. Enclose the completed Crown Audio Factory Service Information form (or securely attach it to the outside of carton) and re-seal the shipping pack with a sturdy carton sealing tape.

#### 7.2.5 Estimate Approval

Approval of estimate must be given within 90 days after being notified by Crown Audio Inc. Units still in the possession of Crown after 90 days of the estimate will become the property of Crown Audio Inc.

#### 7.2.6 Payment of Non-Warranty Repairs

Payment on out-of-warranty repairs must be received within 90 days of the repair date. Units unclaimed after 90 days become the property of Crown Audio Inc.

If you have any questions, please contact Crown Factory Service.

#### Crown Factory Service

1718 W. Mishawaka Rd.,  
Elkhart, Indiana 46517 U.S.A.

#### Telephone:

574.294.8200  
800.342.6939 (North America,  
Puerto Rico, and Virgin Islands only)

#### Facsimile:

574.294.8301 (Technical Support)  
574.294.8124 (Factory Service)

#### Internet:

<http://www.crownaudio.com>

## 8 Warranty



### UNITED STATES & CANADA

#### SUMMARY OF WARRANTY

Crown International, 1718 West Mishawaka Road, Elkhart, Indiana 46517-4095 U.S.A. warrants to you, the ORIGINAL PURCHASER and ANY SUBSEQUENT OWNER of each NEW Crown product, for a period of three (3) years from the date of purchase by the original purchaser (the "warranty period") that the new Crown product is free of defects in materials and workmanship. We further warrant the new Crown product regardless of the reason for failure, except as excluded in this Warranty.

#### ITEMS EXCLUDED FROM THIS CROWN WARRANTY

This Crown Warranty is in effect only for failure of a new Crown product which occurred within the Warranty Period. It does not cover any product which has been damaged because of any intentional misuse, accident, negligence, or loss which is covered under any of your insurance contracts. This Crown Warranty also does not extend to the new Crown product if the serial number has been defaced, altered, or removed.

#### WHAT THE WARRANTOR WILL DO

We will remedy any defect, regardless of the reason for failure (except as excluded), by repair, replacement, or refund. We may not elect refund unless you agree, or unless we are unable to provide replacement, and repair is not practical or cannot be timely made. If a refund is elected, then you must make the defective or malfunctioning product available to us free and clear of all liens or other encum-

brances. The refund will be equal to the actual purchase price, not including interest, insurance, closing costs, and other finance charges less a reasonable depreciation on the product from the date of original purchase. Warranty work can only be performed at our authorized service centers or at the factory. We will remedy the defect and ship the product from the service center or our factory within a reasonable time after receipt of the defective product at our authorized service center or our factory. All expenses in remedying the defect, including surface shipping costs in the United States, will be borne by us. (You must bear the expense of shipping the product between any foreign country and the port of entry in the United States including the return shipment, and all taxes, duties, and other customs fees for such foreign shipments.)

#### HOW TO OBTAIN WARRANTY SERVICE

You must notify us of your need for warranty service within the warranty period. All components must be shipped in a factory pack, which, if needed, may be obtained from us free of charge. Corrective action will be taken within a reasonable time of the date of receipt of the defective product by us or our authorized service center. If the repairs made by us or our authorized service center are not satisfactory, notify us or our authorized service center immediately.

#### DISCLAIMER OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

YOU ARE NOT ENTITLED TO RECOVER FROM

US ANY INCIDENTAL DAMAGES RESULTING FROM ANY DEFECT IN THE NEW CROWN PRODUCT. THIS INCLUDES ANY DAMAGE TO ANOTHER PRODUCT OR PRODUCTS RESULTING FROM SUCH A DEFECT. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

#### WARRANTY ALTERATIONS

No person has the authority to enlarge, amend, or modify this Crown Warranty. This Crown Warranty is not extended by the length of time which you are deprived of the use of the new Crown product. Repairs and replacement parts provided under the terms of this Crown Warranty shall carry only the unexpired portion of this Crown Warranty.

#### DESIGN CHANGES

We reserve the right to change the design of any product from time to time without notice and with no obligation to make corresponding changes in products previously manufactured.

#### LEGAL REMEDIES OF PURCHASER

THIS CROWN WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE. No action to enforce this Crown Warranty shall be commenced after expiration of the warranty period.

THIS STATEMENT OF WARRANTY SUPERSEDES ANY OTHERS CONTAINED IN THIS MANUAL FOR CROWN PRODUCTS. 12/01



## 8 Warranty



### SUMMARY OF WARRANTY

Crown International, 1718 West Mishawaka Road, Elkhart, Indiana 46517-4095 U.S.A. warrants to you, the ORIGINAL PURCHASER and ANY SUBSEQUENT OWNER of each NEW Crown<sup>1</sup> product, for a period of three (3) years from the date of purchase by the original purchaser (the "warranty period") that the new Crown product is free of defects in materials and workmanship, and we further warrant the new Crown product regardless of the reason for failure, except as excluded in this Warranty.

<sup>1</sup> **Note:** If your unit bears the name "Amcron," please substitute it for the name "Crown" in this warranty.

### ITEMS EXCLUDED FROM THIS CROWN WARRANTY

This Crown Warranty is in effect only for failure of a new Crown product which occurred within the Warranty Period. It does not cover any product which has been damaged because of any intentional misuse, accident, negligence, or loss which is covered under any of your insurance contracts. This Crown Warranty also does not extend to the new Crown product if the serial number has been defaced, altered, or removed.

### WHAT THE WARRANTOR WILL DO

We will remedy any defect, regardless of the reason for failure (except as excluded),

### WORLDWIDE EXCEPT USA & CANADA

by repair, replacement, or refund. We may not elect refund unless you agree, or unless we are unable to provide replacement, and repair is not practical or cannot be timely made. If a refund is elected, then you must make the defective or malfunctioning product available to us free and clear of all liens or other encumbrances. The refund will be equal to the actual purchase price, not including interest, insurance, closing costs, and other finance charges less a reasonable depreciation on the product from the date of original purchase. Warranty work can only be performed at our authorized service centers. We will remedy the defect and ship the product from the service center within a reasonable time after receipt of the defective product at our authorized service center.

### HOW TO OBTAIN WARRANTY SERVICE

You must notify your local Crown importer of your need for warranty service within the warranty period. All components must be shipped in the original box. Corrective action will be taken within a reasonable time of the date of receipt of the defective product by our authorized service center. If the repairs made by our authorized service center are not satisfactory, notify our authorized service center immediately.

### DISCLAIMER OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

YOU ARE NOT ENTITLED TO RECOVER FROM US ANY INCIDENTAL DAMAGES RESULTING FROM ANY DEFECT IN THE NEW CROWN PRODUCT. THIS INCLUDES ANY DAMAGE TO ANOTHER PRODUCT OR PRODUCTS RESULTING FROM SUCH A DEFECT.

### WARRANTY ALTERATIONS

No person has the authority to enlarge, amend, or modify this Crown Warranty. This Crown Warranty is not extended by the length of time which you are deprived of the use of the new Crown product. Repairs and replacement parts provided under the terms of this Crown Warranty shall carry only the unexpired portion of this Crown Warranty.

### DESIGN CHANGES

We reserve the right to change the design of any product from time to time without notice and with no obligation to make corresponding changes in products previously manufactured.

### LEGAL REMEDIES OF PURCHASER

No action to enforce this Crown Warranty shall be commenced after expiration of the warranty period.

HIS STATEMENT OF WARRANTY SUPERSEDES ANY OTHERS CONTAINED IN THIS MANUAL FOR CROWN PRODUCTS. 7/01

This page intentionally left blank



### Crown Factory Service Information

Shipping Address: Crown International, Factory Service, Plant 2 SW, 1718 W. Mishawaka Rd., Elkhart, IN 46517

Phone: 1-800-342-6939 or 1-574-294-8200 Fax: 1-574-294-8124

Owner's Name : \_\_\_\_\_

Shipping Address : \_\_\_\_\_

Phone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_ Email Address: \_\_\_\_\_

Model: \_\_\_\_\_ Serial Number: \_\_\_\_\_

Purchase Date : \_\_\_\_\_

NATURE OF PROBLEM

(Be sure to describe the conditions that existed when the problem occurred and what attempts were made to correct it.)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Other equipment in system: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If warranty has expired, payment will be:

- Cash/Check
- VISA
- MasterCard
- C.O.D.
- Purchase Order for Crown Dealer

Card Number: \_\_\_\_\_ Exp. Date: \_\_\_\_\_

Signature: \_\_\_\_\_

ENCLOSE THIS PORTION WITH THE UNIT. DO NOT MAIL SEPARATELY.



**H** A Harman International Company