

# ASTINtrew®



## **Astin Trew AT2-2100 integrated amplifier**

YOUR PERSONAL USER GUIDE

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All specifications are liable to change without notice. E&OE

|                           |
|---------------------------|
| Your Product Serial No    |
| <input type="text"/>      |
| Date Purchased            |
| <input type="text"/>      |
| Dealership Purchased From |
| <input type="text"/>      |

# 1. Introduction to the Astin Trew AT2-2100 Integrated Amplifier

Thank you for purchasing the Astin Trew AT2-2100, a multi-input home audio integrated amplifier. The AT2-2100 is a world class audio product, designed to offer very high quality audio amplification from analogue line level inputs (RCA and XLR type), to your loudspeakers.

It has been designed to offer you musical enjoyment, our design philosophy at Astin Trew is and will always be 'true to the source' and by that we mean that our audio products offer a faithful and musically engaging insight into the music, will offer you a musical performance – not a 'hi-fi' sound.

Please read this manual carefully and you will gain an understanding of the potential of this amplifier, which will reward you with a lifetime of listening pleasure Trew philosophy, summed up in our tag line 'true to the source'.

## 2. Brief product overview

It is relatively easy to design an amplifier with very impressive specifications, but our listening tests over the years show us that, important as they are, there is so much more to an amplifier design than specifications for true musicality.

Here are some of the ways we have achieved this:

**Electronic Components in the signal path:** All chosen for their inherent sound performance qualities.

**Power supplies:** One of the critical areas of any quality audio equipment.

The AT2-2100 has dual mono power supplies from two audio quality 160VA transformers, each supplying 16,000uf capacitance storage on each channel, and separate dual mono power supplies for the pre-amplifier. Individual stages ensure a clean supply, lowest noise and isolation between circuits and incoming power supply.

The design incorporates excellent EMI/RFI (Electromagnetic and radio frequency interference) rejection to prevent this now ever present form of audible 'noise' from entering the amplified signal path.

**Input switching:** Is through high quality sealed gold plated relays, reducing signal pathways and offering the best long term switching solution.

**Pre-amplifier circuit(s):** A hybrid design, the active circuit is run substantially in 'class A' to eliminate crossover distortion at low levels, and a front end audio transformer stage ensures galvanic isolation for very low noise and EMI/RFI isolation.

*• There are two pre-amplifier settings, when powered up, the 'normal' setting is activated and this offers a neutral balance. A fascia mounted switch AT-1 offers a slightly warmer sound quality that improves some musical material, and can also help 'correct' overly bright or analytical loudspeakers. Do try both and see which you prefer in your home system or with particular source materials.*

**Volume control:** A ladder resistor network specially developed for high end audio products is employed. Extensive audio comparisons between the 'usual' potentiometer and resistor networks used in high quality audio products against our solution proved to us that this is a critical element in amplifier design and often overlooked.

**Power amplifier circuit:** Based on our own MOSFET design (patent applied for), an all discrete complimentary circuit offering 90W/8 Ohms. Running partly in class A to remove crossover distortion that tends to mask the musical micro-details that make music replay convincing. The heatsinks do get very warm in use. Please refer to section 3 'getting started' regarding correct placement of this amplifier when in use.

**Mechanical design:** The fascia is manufactured from aluminium and milled to form the unique design. The aluminium fascia is then shot blasted, deep etched and anodised for a high quality durable finish. The casework and chassis are formed from mild steel and wet painted. The supporting feet are designed to offer isolation from vibration.

**Packaging for transit:** The AT2-2100 is boxed with a foam inner to protect it from all but the worst abuse during third party transit. Your local Dealer will ensure your amplifier arrives in perfect condition.

### 3. Getting started, Unpacking, location and power/signal connections

Be careful when unpacking, do not use a long-bladed knife to cut through the box sealing tape, and keep the packing for any future transportation. In the box, you will find a mains cable to suit your country, a remote control unit and batteries, the operation manual; and the AT2-2100 in its protective bag.

**Position for use:** The AT2-2100 casework does become warm to the touch in normal operation. It is therefore essential that the unit has adequate ventilation around it, a minimum of 50mm open ventilation all round. Do not place on a carpet or any surface that will reduce ventilation through slots in the base chassis. Do not place in direct sunlight or directly above or near other hot equipment or heaters, or place in an enclosed air space such as a cupboard. If it does overheat, it will turn off automatically. Once cooled down, it will re-set and start again.

Do not site near or below any liquids that could spill onto your AT2-2100. If any liquids do come in contact with the unit, turn the mains power off at the wall switch immediately and pull plug out of the wall socket, as there is serious potential for electric shock or fire hazard. In the unfortunate event of liquid ingress, take the AT2-2100 to your Dealer for inspection and he can advise on any further action required.

Position the AT2-2100 for use on a smooth and flat surface. Placing on a specialist audio isolation stand or shelf may well bring further benefits to the sound qualities achievable, some experimentation is recommended.

**Connecting your AT2-2100:** Before connecting any inputs/outputs, it is good practice to switch off all associated equipment that will be connected to the unit.

There are 6 input (L/R pair) connections – all six can be connected at the same time, but only one will be selected at any time from the six selection switches on the left-hand side of the front fascia or your remote control, shown as inputs 1,2,3,4,5 and 6. Inputs 1-5 are RCA input connections; input 6 is an XLR balanced signal input.

**Outputs:** There is one RCA (L/R pair) pre-amplifier output, it is volume controlled.

A 'mono-summed' RCA active sub output, offering the correct impedance to optimise any active sub-bass input.

A ¼" jack-plug headphone output on the front fascia. Inserting this jack plug will automatically mute the loudspeaker outputs.

The Loudspeaker output terminals (L/R pairs) will accept banana plugs, spade end connectors or bare wires.

**Power / signal connections and use:** Position your AT2-2100 where it will be used, ensuring you have adequate room to make connections at the rear, or move the amplifier and/or stand so you have access.

**Power supply:** Plug in the mains cable supplied but do not switch on at the wall or the AT-2100 just yet.

**Inputs and outputs:** Connect the RCA/XLR input cables from your source components and loudspeaker cables.

**Turn mains power on:** Push in the central power on/off switch and the switch will illuminate. After a 10 second time-delay switch has gone live your AT2-2100 amplifier will be operational.

**Switch to the input-option required:** From the left-hand side push switches or remote control, the option button chosen will be illuminated.

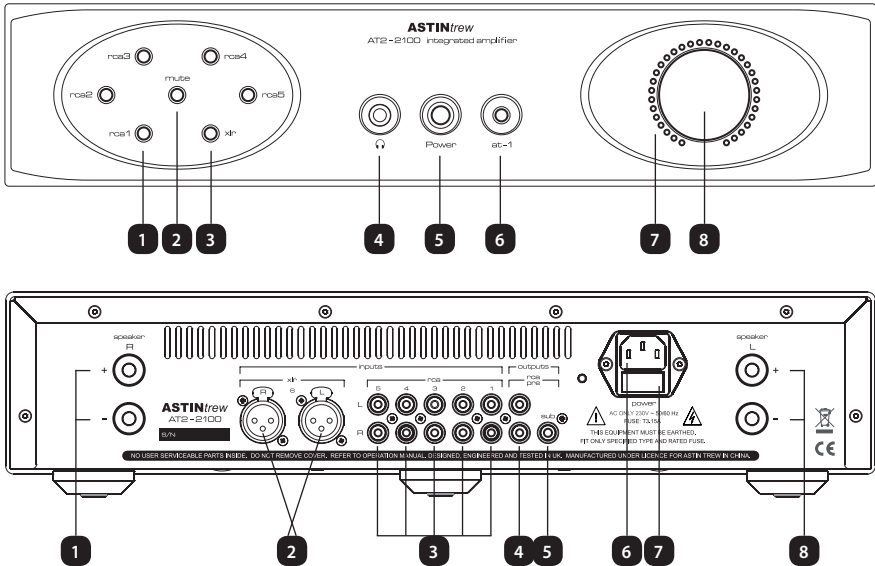
**Volume setting:** from the rotary control knob on the right side of the front fascia, or remote controller. The LED indicator around the knob offers you a visual indication of volume setting.

Assuming you have switched on all other associated equipment, you can now play music through your AT2-2100 amplifier.

**'Warm' option setting:** switch AT-1 can be switched 'on the fly' to assess whether it is required or not. This is entirely subjective.

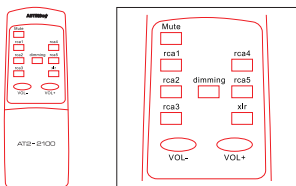
**Fault condition warning light:** The mute switch illumination will flash on and off if the amplifier has identified a fault condition or too low a voltage supplied to the unit, and the loudspeaker protection circuit will be activated (see section 'Trouble shooting' also).

## 4. Front fascia and rear panel illustrations



| Front fascia                              | Rear panel                              |
|---|---|
| 1 5 x RCA input switches                  | 1 Loudspeaker connection, Right channel |
| 2 Mute switch + fault condition indicator | 2 1 pair XLR input connections          |
| 3 XLR input switch                        | 3 5 pairs RCA input connections         |
| 4 Headphone output socket                 | 4 1 pair RCA pre-amplifier output       |
| 5 ON/OFF mains power switch               | 5 1 x RCA mono sub bass output          |
| 6 'Warm' output pre-amplifier             | 6 IEC mains power input socket          |
| 7 LED visual volume level indication      | 7 Mains fuse holder.                    |
| 8 Volume control knob                     | 8 Loudspeaker connection, Left channel  |

## 5. Remote control illustration



## 6. Product Specifications

|                      |  |
|----------------------|--|
| Make and Model       | Astin Trew AT2-2100  |
| General Description  | Two channel integrated amplifier                                     |
| Mains voltage input  | 230VAC (50 ~ 60Hz) / Voltage range: 220--240VAC                      |
| Inputs, line level   | 5 x RCA, 1 x XLR   |
| Input impedance      | 47K ohm  |
| Outputs              | Speakers x 1, pre-amplifier x 1, sub-bass x 1, headphone jack x 1    |
| Output power         | 90W (8 ohm) / 135W (4 ohm)   |
| Damping factor       | 60 (8 ohm)   |
| Frequency response   | +0.1 / - 3dB @ <10Hz - >140KHz (10W/8ohms output)                    |
| Distortion (1W)      | 0.002% @ 1W/8ohms 20Hz...20KHz<br>volume control @ 20dB overall gain |
| Distortion (80W)     | <0.01% @ 80W/8ohms 20Hz...20KHz<br>volume control @20dB overall gain |
| Hum + noise          | >104dB below full output, volume control<br>@20dB overall gain       |
| Power source         | 220V – 240V 50Hz / 60Hz  |
| Power source         | standby – 50W  |
| Dimension            | (W x D x Ht. o/a) 430mm x 102mm x 410mm                              |
| Colour options       | Silver and Black (special colours to order)                          |
| Weight (unboxed)     | 11.6Kg   |
| Boxed dimensions     | (W x D x Ht.) 550mm x 500mm x 200mm                                  |
| Gross weight (boxed) | 13Kg (inc. accessory items)  |

## 7. Troubleshooting

Your Astin Trew AT2-2100 should give you many years of trouble free musical pleasure. However, if it does not seem to be working properly, please ensure you have tried these 'simple' tests before you contact your Dealer for further advice. 99% of problems tend to be simple to rectify.

Check the power chord is connected and the power switch is illuminated when you switch on.

1. Check all input and output signal cables are fully inserted at both ends.
2. Ensure the input selection is switched to your desired input.
3. Ensure your ancillary equipment is working correctly.





**More specifically:**

No power to the amplifier: Check the power cord fuse (UK) and AT2-2100 Mains input fuse.

Poor speaker imaging, low bass output: Check the loudspeaker wiring is not connected out of phase.

No sound output. Check the mute is not switched on.

Remote control not working: Check the remote control batteries.

Hum from speakers: Incorrect grounding, check Mains polarity and grounding on all connected equipment.

Illuminated mute switch is flashing on and off – turn off the amplifier, count 10 and switch on again. If the mute switch illumination is still flashing, this may indicate there is either:

*(A) too low a mains voltage input, check to see if it is above 200VAC*

*(B) a fault with one of the loudspeakers or loudspeaker cable, shorting the +- outputs.*

*(C) a fault occurrence within the amplifier.*

If in doubt, talk to the Dealer who sold you the amplifier for advice.

## 8. Guarantee

A two-year guarantee is given and is valid from the purchase date of your new Astin Trew AT2-2100.

This is in respect of any defect in materials or workmanship and you will need to retain your receipt as proof of purchase. Each Astin Trew product has its own unique serial number and this is held both at the Dealer who has sold you the goods and at Astin Trew. All claims should be made through the Dealer who sold you the goods who will inspect them first to assess the problem.

**The two year guarantee excludes:**

*A. All damage caused by accident, misuse, neglect, incorrect installation or adjustment, non-authorized repairs, servicing or component replacements.*

*B. Liability for damage or loss in transit from the Dealer or the purchaser back to Astin Trew or their authorised local service agent for the purposes of inspection, repair or replacement.*

Carriage costs to Astin Trew or their authorised repair Agent shall be borne by the consignor.

If the returned equipment is found not to be faulty in respect of any defect in materials or workmanship, Astin Trew and their Agents reserve the right to make a charge for both the examination of the goods and return carriage.

In the event of a product failure, neither Astin Trew Ltd. or its Distributor or Dealer/ re-seller shall be liable for any injury, loss or damage caused to property or products other than the product under guarantee.

This guarantee does not affect your consumer rights under English law.

## 9. CE, RoHS and WEEE

All Astin Trew products comply with CE regulations, the RoHS Directive (EU) and is designed to comply with the legal provisions of EU directives 89/3336/EC and 72/23/EC. All Astin Trew products should be disposed of after use in accordance with the WEEE Directive (EU).

## 10. Contact

Please refer to your Dealer for all after sales, and accessories, we only sell through Dealers who are competent and understand our products.

Astin Trew can be contacted via our web site on **[www.astintrew.co.uk](http://www.astintrew.co.uk)**. If you wish to tell us about your user experience with the AT2-2100 or about the Dealer service you experienced, we would like to hear from you. **Email: [info@astintrew.co.uk](mailto:info@astintrew.co.uk)**

## 11. Customer Notes



**ASTINtrew®**

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