

# Congratulations on the purchase of your Hughes & Kettner ATS 120!

The ATS 120 has been developed to combine optimum sound quality and flexibility with simple, user-friendly operation.

The ATS 120's design makes the majority of functions self-explanatory. This user manual is intended to give you an overview of all the possibilities and features of the amplifier.

Enjoy your ATS 120!



## Front panel control elements

(1) INPUTS: sockets for connecting your instrument cable.

Nowadays, many different electric guitars are available, ranging from the classic Strat with its “single coil” pickups to modern designs incorporating very high power active humbucking units. To ensure that all types of pickups can be ideally matched to the preamp of the ATS 120, two inputs are provided with different sensitivity ratings.

LO: Input for guitars fitted with high output / active pickup systems.

HI: Input for guitars fitted with traditional passive pickup systems.

## The ATS 120's three channels

The Hughes & Kettner ATS 120 offers three separate channels, each of which has its own distinctive sound characteristics. The individual channels offer a wide variety of different sounds thanks to their independent GAIN / VOLUME controls and equalisation sections.

## Selecting a channel

Above the individual VOLUME or GAIN control of each channel (Clean - Volume, Crunch - Gain and Lead - Gain) there is a pushbutton which is used to activate it.

The active channel is indicated by an arrow-shaped LED. When using the CRUNCH and LEAD channels, different coloured LED arrows are used to indicate which GAIN and MASTER controls are operational.

## The ATS 120 Clean channel

The CLEAN Channel is a “solid state” (i.e. transistor) design. This provides the **modern**, crystal-clear sounds popular with contemporary recording artists. However, **the** traditional, passive three-band equalisation controls and the “Soft-Click” circuitry make it possible to reproduce the mild distortion characteristics of a vintage valve amplifier. The “Soft Click” circuit prevents hard-sounding, unattractive transistor distortion and provides pleasant, lightly distorted clean sounds at higher gain settings.

### (2) VOLUME :

determines the volume of the CLEAN channel. At settings around 8 or 9, mildly distorted “clipped” rhythm sounds can be produced from single coil pickups. Higher output pickups will produce a similar effect at a correspondingly lower setting.

### (3) BASS, MID, TREBLE :

the CLEAN channel’s three tone controls can be used to generate a wide variety of different clean sounds. Start from the standard setting (Bass, Mid, Treble all at the 12 o’clock position ) and alter the positions to suit your taste.

### (4) BRIGHT:

activating the BRIGHT switch gives additional boost to the very high, shimmering harmonics present in the clean channel.

## The ATS 120 Crunch channel

The CRUNCH channel of the ATS 120 is a tube design, offering the distinctive characteristics of traditional tube amplifiers. Depending of the GAIN setting chosen and the type of pickups being used, CRUNCH provides a broad spectrum of valve sounds, from clean to overdrive.

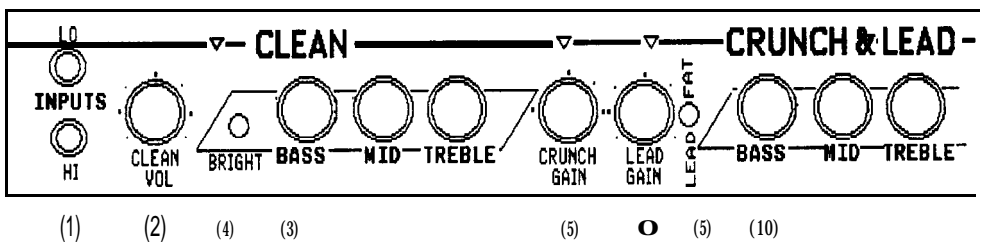
The CRUNCH channel on the ATS 120 has an extremely broad dynamic range, the degree of distortion generated can be very finely adjusted by varying your attack and the volume setting on the guitar itself.

### (5) CRUNCH GAIN:

determines the input sensitivity, thus matching the channel to the pickup output. Low GAIN settings make it possible to produce clean to lightly distorted sounds; a high setting produces the classic valve overdrive sounds.

### (6) CRUNCH VOL.:

controls the CRUNCH channel’s volume in relation to the Clean and Lead channels.



## The ATS 120 Lead channel

(7) LEAD GAIN:

determines the input sensitivity of the LEAD channel, allowing fine tuning of the degree of distortion and the intensity of the compression effect typical for tubes.

(8) LEAD FAT:

The LEAD FAT switch only affects the LEAD channel, it makes the lead sound fuller. Even “thin”-sounding guitars can be given noticeably more punch by using the LEAD FAT function.

(9) LEAD VOL:

the LEAD VOL. control determines the LEAD channel’s volume relation to the Clean and Crunch channels, without altering the character of the sound.

## The tube channel’s equalisation section (10)

CRUNCH and LEAD have a shared four-band active equalisation section which can be used to cut and boost the amount of particular frequencies present in the signal. The sound of each channel is carefully tuned to ensure that using a particular setting for both of them will produce a natural-sounding transition.

**BASS:** controls the bottom end fundamentals of the sound, giving it punch.

Approx. +/- 10 dB a t 120 Hz

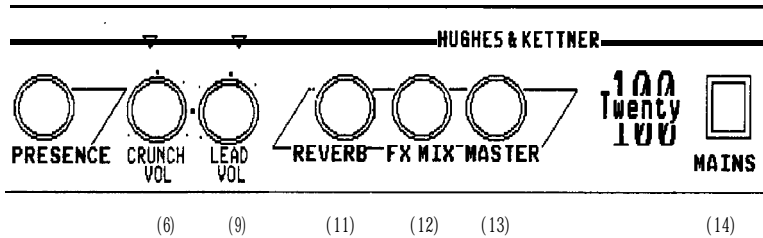
**MID:** controls the amount of sustain available and the penetration characteristics.

Approx. +/- 12 dB a t 850 Hz

**TREBLE:** provides precise control over the “cut” and bite of the guitars sound.

Approx. +/- 10 dB a t 4,2 kHz

**PRESENCE:** controls the harmonic content, providing crisper Crunch and searing Lead. Approx. +/- 16 dB a t 12 kHz.



## The Reverb. FX- and Master Section of the ATS 120

An ACCUTRONICS spring system is used to produce the reverb effect in the ATS 120. The quality of a reverb unit depends largely on the length and number of springs used; this genuine Accutronics unit generates a warm, realistic effect for the ATS 120 by having three particularly long springs.

Increasing the degree of distortion on an overdriven sound will tend to make it more sensitive to reverb; in other words, too much reverb can easily swamp the sound. For this reason, the reverb effect is differently tuned for each of the three channels. When you change channels, you will not need to alter the reverb setting to achieve a similar-sounding effect.

### (11) REVERB:

controls the amount of tuned reverb for CLEAN, CRUNCH and LEAD.

### (12) FX-MIX:

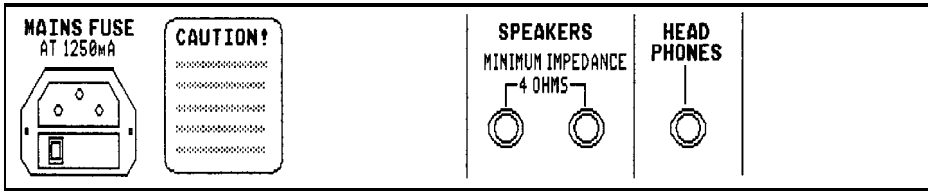
determines the relative volumes of the original sound and the signal from an external effects unit connected to the effects loop. DRY= only original signal; FX= only processed signal. Intermediate setting allow the proportions of original and processed signals to be balanced as desired.

**TIP:** If no external unit is connected up, the FX-MIX control can be used in conjunction with the ATS STAGEBOARD (optional) to set up an alternative master volume setting. This can then be called up using the ATS Stageboard.

**PROGRAMMING A SECOND MASTER VOLUME SETTING:** select the channel or channels for which you wish to program an alternative volume setting. This is done by turning the appropriate FX-SELECT switch or switches to the ON position (there are 3 located on the rear panel of the ATS 120). Activate the **EXT.FX** function on the ATS Stageboard. Set the desired volume level using the FX-MIX control. By turning the EXT. FX switch ON/OFF, you can now cycle between the two different master volume settings.

(13) MASTER: controls the overall volume of the ATS 120.

(14) MAINS: power on/off switch. When switched on, the red LED arrow will be illuminated.



(15) / (16) / (17)

(18)

(19)

## The rear panel on the ATS 120

### (15) MAINS LEAD SOCKET

point for connecting the euro mains lead included with your amplifier.

### (16) FUSE:

safety holder for the mains fuse (AT 1250mA). The fuse holder can be removed by depressing its fixings on both sides. The fuse can then be changed.

### (17) VOLTAGE SELECTOR, 220-240 VOLTS:

on all European models, the ATS 120 can be set to operate on either a 220 or 240 volt supply by rotating the insert incorporated in the fuse holder. The value visible in the fuse holder's window is the one which is operative.

Models for North America and Japan are equipped at the factory with different transformers which are pre-set to the appropriate mains voltage standards.

### (16) SPEAKERS:

the ATS 120 has two sockets for connecting loudspeakers or cabinets. The combined impedance of all loudspeakers used must never be less than 4 Ohms!

The loudspeaker fitted to the combo version has an 8 Ohms impedance. Any further speaker cabinet connected to it should have an impedance of either 8 or 16 Ohms.

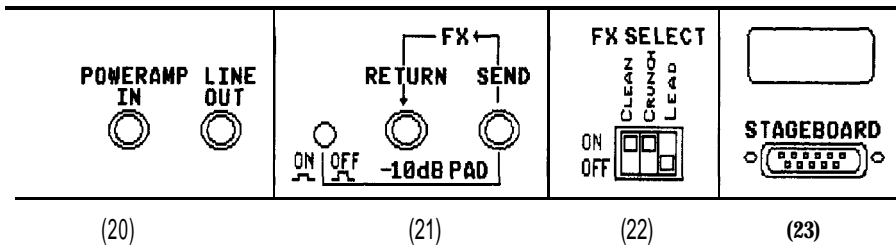
For the ATS 120 Head: if a single speaker cabinet is used, its impedance should be either 4 Ohms or 8 Ohms. When two cabinets are used, each one should have an impedance of either 8 or 16 Ohms.

### (19) HEADPHONES:

socket for standard stereo headphones. The frequency response of the signal fed to the headphone socket is tailored to reproduce the characteristics of a typical guitar speaker. This produces a "comfortable" sound which is suitable even for lengthy practice sessions.

### (20) POWER AMP IN AND LINE OUT:

these two sockets have a variety of uses. LINE OUT: this provides access to the preamplifier signal (before the poweramp), which can then be send to a mixing console



via a RED BOX. This socket can also be used to send the preamplifier signal to an external power amp or to additional guitar amplifiers.

**LINE OUT AND POWER AMP IN:** used together the two sockets can provide an extra loop for connecting external effect units. When used this way, LINE OUT corresponds to the SEND socket (towards the effect unit) and POWER AMP IN to the RETURN socket (back from the effects unit to the amplifier).

**POWER AMP IN:** this allows external preamps to be connected up as alternatives to those built into the ATS 120. Their volume can be determined using the MASTER control. When the POWER AMP IN socket is in use, the internal preamplifiers are automatically switched out of circuit.

#### (21) FX LOOP:

the FX LOOP is specially designed for use with external effects devices. The SEND socket is connected to the INPUT of the effects unit, and the RETURN with the OUTPUT. The -10dB PAD switch adjusts the sensitivity of the loop to make it compatible with different units (OFF= 1V / ON= 300 mV, suitable for f.e. floor-standing effects units).

**TIP!** The loop can also be used to connect a second instrument or a tape for playback. This means that when practicing an additional instrument, drum machine or a tape recorder can be connected to the RETURN socket. Once the FX SELECT switch has been set to the ON position, the volume can be determined using the FX-MIX control.

#### (22) THE EFFECTS MATRIX ON THE ATS 120: FX-SELECT:

The three mini switches on the FX SELECT matrix are used to allocate a connected external effects unit to particular channels. ON indicates that the effects unit will be activated. By using these presets, a channel change from CLEAN to LEAD (for instance) will activate the effect without the need for extra switching procedures.

If, as described under point 12, the FX MATRIX is being used to pre-programme an additional master volume setting, the FX SELECT switch relating to the appropriate channel (s) must be in the ON position.

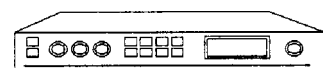
#### (23) STAGEBOARD:

this 9-pin socket is used to connect the ATS 120 Stageboard, available as an optional accessory. Switching facilities: CLEAN/CRUNCH/LEAD/REVERB/EFFECT.

# ATS 120 Connections

EFFECTS UNIT, or for practice: 2nd Instrument, tape recorder, drum machine.

EXTERNAL POWER AMPLIFIER and connected speaker cabinet (s).



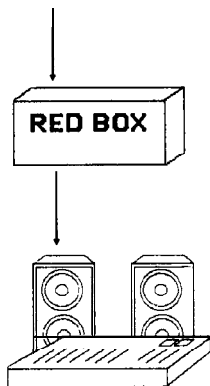
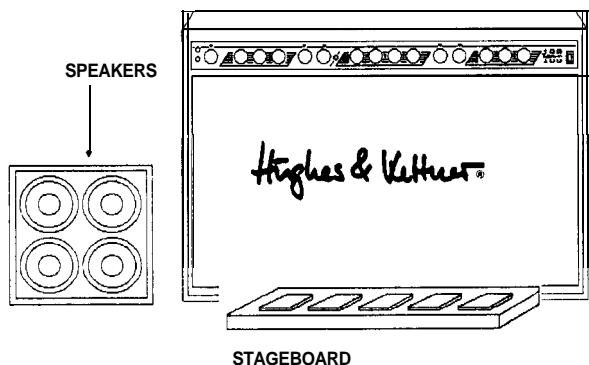
INPUT  
↑  
FX SEND

OUTPUT  
↓  
FX RETURN

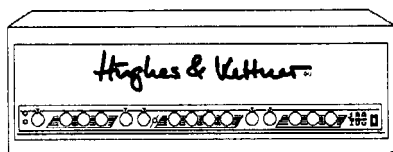


INPUT  
↑  
LINE

OUT OR  
LINE OUT



LINE OUT Signal for PA- and Recording/Studio applications.

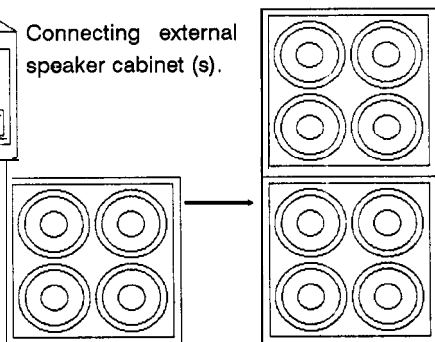


Connecting external speaker cabinet (s).

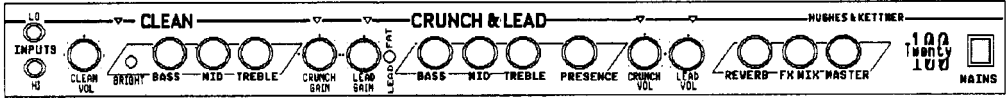
SPEAKERS ——— INPUT

When a single cabinet is being used, its impedance must be 4 or 8 Ohms.

When two cabinets are being used, the impedance of EACH cabinet must be 8 or 18 Ohms.



# ATS 120 Sound Examples



The examples shown here are only intended as general illustrations, because they are strongly affected by the instrument used and your individual playing style. However, these settings will give you an initial overview of the range which the ATS 120 is capable of producing.

## 1. TOP 40 SET

CLEAN							CRUNCH & LEAD									
VOL.	BRI.	BASS	MID	TREB.	CRU. GAIN	LEA. GAIN	L. FAT	BASS	MID	TREB.	PREC.	CR. VO.	LEAVO.	REV	MASTER	
6	ON	10	5	5	6	8	-	+3	-1	+2	0	6	5	4	5	

## 2. THE FUSION SET

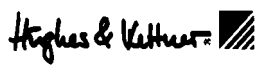
2.CLEAN						CRUNCH & LEAD									
VOL.	BRI.	BASS	MID	TREB.	CRU. GAIN	LEA. GAIN	L. FAT	BASS	MID	TREB.	PREC.	CR. VO.	LEAVO.	REV.	MASTER
8	-	10	7	5	7.5	7	ON	+3	+3	0	6	7	6.5	3	5

## 3. THE METAL SET

CLEAN						CRUNCH & LEAD									
VOL.	BRI.	BASS	MID	TREB.	CRU. GAIN	LEA. GAIN	L. FAT	BASS	MID	TREB.	PREC.	CR. VO.	LEAVO.	REV.	MASTER
6	ON	10	6	10	6.5	10	-	+3	+1	+3	+3	+2	6.5	6	55

## 4. THE ROCK SET

CLEAN						CRUNCH & LEAD									
VOL.	BRI.	BASS	MID	TREB.	CRU. GAIN	LEA. GAIN	L. FAT	BASS	MID	TREB.	PREC.	CR. VO.	LEAVO.	REV.	MASTER
7	ON	10	7	10	10	8	ON	+1	+2		7	6-7	6-7	4	5





# Care of your amplifier and guarantee conditions

## A WORD ABOUT VALVES:

Valves need to reach a certain operating temperature. They need a few seconds after the power has been switched on to warm up before they will work.

Valves are sensitive to shock. Once you have switched the amplifier off, give it a few minutes to cool down before transporting it.

The sound characteristics of valves will also tend to change with time. Occasionally, they will need replacing. The ECC 83 valves used in the ATS 120 are some of the most commonly used, and the most affordable. Generally speaking, a change of valves is only necessary every few years.

**Before opening the amplifier casing, ALWAYS remove the mains plug!**

## WHERE TO USE THE AMPLIFIER:

do not use the unit under the following conditions:

- extremes of temperature or high humidity
- poor ventilation or insufficient cooling
- extreme vibrations or impacts

## SERVICING AND REPAIRS:

If your amplifier suffers a failure or fault, refer the matter to your authorised Hughes & Kettner dealer. Do not try to rectify the problem yourself; servicing and repairs are jobs for experts. Please note: any interference with the amplifier by unauthorized persons or workshops will render your guarantee invalid.

## GUARANTEE CONDITIONS:

Every Hughes & Kettner product is accompanied by a warranty card showing its serial number and a card showing proof of inspection.