## $WARNING \ {\it please read the following list carefully}$

- A. ALWAYS fit a good quality mains plug, conforming to the latest B.S.I. standards.
- ALWAYS wire the plug according to the colour code attached to the mains lead.
- C. NEVER, under any circumstances, operate the amplifier without an earth.
- D. NEVER attempt to bypass the fuses or fit ones of the incorrect value.
- E. NEVER attempt to replace fuses or valves with the amplifier connected to the mains.
- F. DO NOT attempt to remove the amplifier chassis, there are no user serviceable parts.

- G. ALWAYS have this equipment serviced or repaired by competent qualified personnel.
- NEVER use an amplifier in damp or wet conditions.
- DO NOT switch the amplifier on without the loudspeaker connected, and ensure that the impedance selector is correctly matched to the speaker or speakers. (Valve models only.)
- J. PLEASE READ this instruction manual carefully before switching on.

#### ALWAYS ENSURE THAT MARSHALL APPROVED COMPONENTS ARE USED AS REPLACEMENTS

#### Amplifier Cabinet Set-Ups

AMPLIFIER	CABINET	AMP IMP.SETTINGS
1959, 2203, 2210	1 1960A or 1982A 1 1960A + 1960B (or 1982A + 1982B)	16 ohms 8 ohms
1987, 2204, 2205	1 1936 2 1936 1 1960A 1 1960A + 1960B	8 ohms 4 ohms 16 ohms 8 ohms
3210	1 1965A or 1960A 1 1965A + 1965B (or 1966A + 1966B)	8 ohms
4210, 4010	1 1933	8 ohms
4211, 4212, 4104 & 4103	1 1936	4 ohms



Jim Marshall (Products) Limited, Denbigh Road, Bletchley, Milton Keynes MK1 1DQ. Telephone: Milton Keynes (0908) 75411. Telex: 826483 MARAMP-G.

## Marshall

# SPLIT CHANNEL AMPLIFIER HANDBOOK

The range consists of the following:

Amplifiers	
2205	50 watt Split Channel Valve
2210	100 watt Split Channel Valve
3210	100 watt Split Channel Mosfet
Combos:	
	50 44 C 124 C1 137 1
	50 watt Split Channel Valve
4212	50 watt Split Channel Valve
4211	100 watt Split Channel Valve
	50 watt Split Channel Transistor
5212	50 watt Split Channel Transistor
5275	75 watt Split Channel Transistor
5215 100 w	att Split Channel Transistor Combo
5213 10	00 watt Mosfet Reverb Twin Combo
3203 - 30 watt Sj	plit Channel Hybrid Amplifier Head
4203 3	0 watt Split Channel Hybrid Combo

### Congratulations!

I would like to thank you personally for selecting one of our amplifiers.

Our reputation is built on a total commitment to design and engineer the finest amplifiers available in the world. To that end we have spared no effort in providing the very best in materials, and precision workmanship to allow extended years of outstanding performance.

Please be sure to return your registration card, so that we may enter your name in our roster of Marshall users. In Markalt

Again, thank you sincerely.

**Managing Director** 

N.B. Please read warning list on outside back cover before operating your new amplifier.

#### Introduction

For the past two decades, one name has been synonymous with the best in rock amplification. Marshall has now become a household name throughout the world as a symbol of precision acoustic engineering to be relied on, not only for superlative sound quality, but for high performance night after night.

Each amplifier chassis is constructed from steel, precision cut, punched bent and seam welded to form a substantial rigid foundation, strong enough to take all the knocks of the road.

All electronic components are selected and tested to outperform their required functions, and the electrical hardware, such as switches, selectors etc., comply to most international safety standards, to ensure the user is safe from the risk of electric shock. The same applies to both the mains and output transformer. They are designed and built to withstand full output for hour upon hour. To complete the electrical specification all valves are selected from the finest grades available.

After testing and adjusting, each chassis is assembled into cabinets made from finest quality birch ply, corner locked and r.f. bonded for immense strength and longevity.

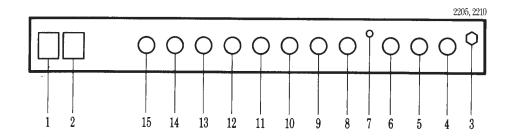
After the black protective P.V.C. covering is bonded and stretched into place, A.B.S. corner protectors and air vents are riveted into position, creating a cabinet manufactured to an equal standard as that of the chassis.

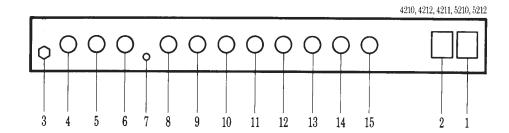
The Marshall 'Split Channel' models offer a wide range of amplifiers, which fulfil all the necessary requirements of the most demanding guitar players. The ability to switch from a clean-rhythm to a distorted lead sound allows the player complete control at all times and also offers the classic Marshall sound at any volume level.

The above features, plus the high standard of Marshall construction, present a formidable range of amplification to cater for almost any style of guitar playing.

Jim Marshall (Products) Ltd. operate a policy of continuous development and reserve the right to change specifications without prior notice.

#### Front Panel Functions 2205, 2210, 4210, 4212, 4211, 5210, 5212





1. Power Switch	Controls total mains power to amplifier.
2. Standby Switch	Controls H.T. supply to amp valves. Allows the filaments to remain heated during breaks. (Not present on 5210 or 5212 transistor combos.)
3. Input Jack	Connects instrument to amplifier.
Normal Channel	

4. Volume Control To set the level of normal or rhythm playing styles.

5. Treble Control Controls increase or decrease of channels high frequency response.

6. Bass Control Controls increase or decrease of the channels low frequency response.

Boost Channel

7. Boost Channel Indicates red when channel is L.E.D. selected via footswitch.

8. Gain Control Controls the amount of boost drive and degree of overdrive

required.

9. Volume Control Controls the loudness level of

the channel.

10. Treble Control Controls the high frequency content of the channel.

11. Middle Control Controls the middle register of

the channel and, at high levels, will modify the treble and bass.

12. Bass Control Controls the low frequency content of the channel output.

13. Master Reverb Controls the depth of the reverb effect in total sound output.

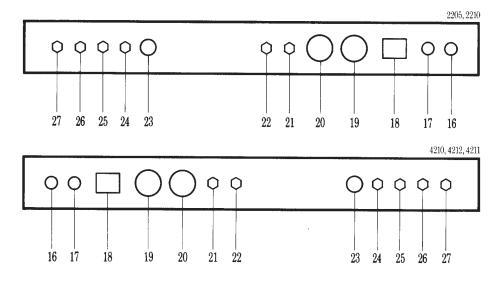
14. Master Volume Controls the overall output level of the amplifier and

loudspeakers.

15. Master Presence Controls additional boost to the upper frequencies (not

included on models 4210 or 5210), of the overall sound. Adds crispness and liveliness.

#### Rear Panel Functions 2205, 2210, 4210, 4212, 4211



Refer to rear label of amp, for correct value. USE CORRECT FUSE ONLY! (Please note. on models 4210 and 2205, this item

is reversed with component 17.)

Refer to rear label of amp, for correct value. USE CORRECT FUSE ONLY! (Please note, on models 4210 and 2205, this item is reversed with component 16.)

18. Mains Input Socket

16. H.T. Fuse

17. Mains Fuse

Connects amplifier to power supply, i.e. 120/220/240v. (Please note, on models 4210)

and 2205 the position of this component is at the extreme of

the chassis.)

19. Mains Selector Matches amplifier power transformer to the incoming

power voltage, i.e. 120/220/240v.

20. Output Selector Matches amplifier output transformer impedance to

loudspeaker load impedance. i.e. 4/8/16 ohm. Internal speakers in  $1 \times 12$  combo units are normally 16 ohm, unless otherwise stated on the loudspeaker chassis. On  $2 \times 12$ combos, the internal speakers are 8 ohms.

21,22. Loudspeaker Parallel connected jacks for Jacks

loudspeaker connections. Loudspeaker lead must always be connected. If one or both sockets are used, total impedance must be matched

to selector and must not be less than 4 ohm. Please refer to outside back cover for set-up

impedances.

23. D.I. or Slave Level

Slave Jack

Controls volume of low level output signal.

24. D.L. or

Jack socket carrying low level version of amplifier output.

Suitable for connecting to recording and P.A. mixing desks, or into slave amplifying

system.

25. Effects Return Return jack from output of Socket

external effects unit.

26. Effects Send Socket

Signal jack to feed the input of external effects unit.

27. Footswitch Jack Connector for boost/reverb foot

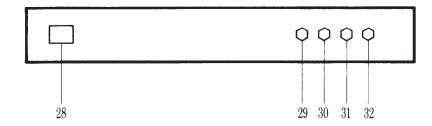
pedal.

#### Operational Functions Note! Before switching on this unit it must be correctly earthed.

- a. Ensure internal or external loudspeakers are connected (21 and/or 22), and properly matched to the amplifier by correct usage of the impedance selector (20). (Valve models only.)
- b. Connect footswitch to correct jack socket (27). (32 on transistor models.)
- c. Connect external effects units, if desired, to (25 and 26), (30 and 31 on transistor models.)
- d. Compect D.I./Slave equipment, if in use (23 and 24).
- e. Turn the volume controls to zero.
- f. Check that mains settings (19), correspond to mains supply and connect to amplifier at socket. (Valve models only.)
- g. Switch power on (1), (and allow valves to heat up to working temperature — on valve models only).
- h. Connect instrument to input jack (3).
- i. Switch standby on (2). (Valve models only.)
- j. Turn boost channel off and normal channel on with the footswitch.
- k. Set volume controls (4) and (14), to desired levels. For clean sounds, use low normal volume (4), and high master volume settings (14). Set tone required by adjusting normal channel treble (5), and bass (6).

- 1. Turn boost channel on and normal channel off by depressing footswitch, the red L.E.D. (7), will now light up.
- m. Set boost channel volume controls (8) and (9). i.e. for a clean sound use low gain (8), and high volume (9), settings. For overdriven sounds. use high gain (8) and low, medium or high volume settings (9). Adjust boost channel treble (10), middle (11), and bass (12), controls for desired tone, but note that these tone controls become less effective during high overdrive situations.
- n. Adjust reverb control (13), for desired depth of effect, using footswitch to control ON/OFF
- o. To achieve maximum overdrive/sustain, use the boost channel, turn the volume controls (8) and (9), to maximum and control the total output of the combo or amp, using the Master Volume (14).
- **p.** The master presence control (15), may be used to further colour the brightness of the sound.
- q. Always ensure that amp is switched off before plugging in headphones.

#### Rear Panel Functions 5210, 5212



- 28. Mains Input Socket
- 29. Headphone Socket

Connects amplifier to supply.

Socket for headphone / line-out insertion of jack plug halfway mutes the speaker and feeds signal to headphones. Full insertion maintains full speaker output plus line-out. Always ensure that amp is switched off before plugging in headphones.

- 30. Effects Return Return jack from output of external effects unit.
- 31. Effects Send
- Signal jack to feed the input of external effects unit.
- 32. Footswitch Jack Connector for boost/reverb dual footswitch unit.

#### Specification 5210, 5212

Normal Channel Sensitivity at 1KHz. all controls full.

.8mV. Max. input signal — 2v. R.M.S.

Min. overload level - 1.5mV.

Tone 5KHz. 22dB. automatic brightness circuit on volume control.

100Hz. 15dB. Mid point 400Hz.

**Boost Channel** Sensitivity at 1KHz. all controls full.

.3mV. Max input signal 1v. R.M.S.

O/L level .6mV.

Gain and Channel volumes full - .5mV.

Treble - 5KHz. 12dB. - Mid full

Automatic brightness circuit on gain control. 33dB. — Mid down

Middle - 500Hz. 17dB. - Treble and bass full.

Bass - 150Hz. 18dB. - Mid down.

Presence — 3KHz. 6dB. (Model 5212 only.)

Headphone / Line-out

Headphone output approximately 100mW. into 8 ohms. Line-out 700mV. at 50 watts

R.M.S. output.

Effects Send / Return Level - 120mV. R.M.S. for full output. Send output impedance -4.7K ohm.

Return input impedance - 100K ohm.

Channel and Reverb Switching Transistor logic L.E.D. indication for boost channel On. Remote double footswitched, single pole switching to earth.

Reverb

Hammond 2 sec. decay. Infinitely variable.

Power Output

50w. R.M.S. into 4 ohm 70 watt high sensitivity loudspeaker. (Model 5210 only.)

50w. R.M.S into  $2 \times 8$  ohm G12-70. Wired parallel for 4 ohm operation. (Model 5212 only.)

Power Supply

Internally adjustable 120/240v, 40/60Hz, 75VA.

Internal mains fuse 120v. — T1A. 240v. — T500mA.

#### Specification 4210, 4211, 4212, 2205, 2210

All values are typical at 1KHz, and all controls maximum unless otherwise stated.

Normal Channel

Sensitivity - 3.5mV.

Maximum clipping level 500mV. Minimum clipping level 6mV.

Treble swing 10KHz, 35dB, Bass 50Hz, 14dB,

Turnover frequency 500Hz.

**Boost Channel** 

Sensitivity — 0.12mV.

Maximum clipping level 500mV. Minimum clipping level 0.4mV.

Treble swing 5KHz. 28dB. Mid at minimum.

Middle swing 400Hz. 15dB.

Bass swing 50Hz, 23dB.

Master Section

Master Volume control operating on both channels but with gain priority to boost channel.

Master presence +6dB. at 4KHz. Turnover frequency 800Hz.

Master reverb Hammond type 4 with treble pre-emphasis at low control settings and

footswitch muting.

Channel Selection

Footswitch controlled transistor logic switching circuit L.E.D. indication of boost channel

selected, channel inhibit circuitry on removal of signal lead.

Effects

Level for rated output — 25mV.

Send / Return

Send output impedance – 10K ohm. Return input impedance 1M ohm.

Breaking connection — return.

D.I. Output

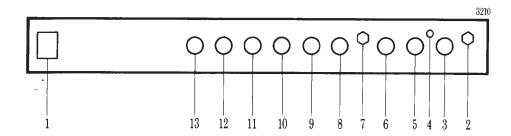
Unbalanced output impedance 100 ohm variable between 350mV, and 1.4v, at rated output.

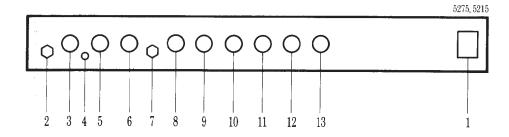
Power Output (Variable between 4, 8, 16 ohm.)

With EL34 valves into 8 ohm load.

 60w. RMS for 4% THD. 4212, 2205 - 70w. RMS for 4% THD. 4211, 2210 - 105w. RMS for 4% THD. Less than 1% THD. for 10 watts RMS output.

#### Front Panel Functions 3210, 5275, 5215





1. Mains Power Switch

ON/OFF for mains power to amplifier.

2. Input Jack Socket

Connects instrument to amplifier.

3. Gain + Pull E.Q. Control Controls the amount of drive and degree of overdrive required. When control is pulled forward, the Master E.Q. is switched in, to allow greater tonal flexibility. Pull switch not included on Model 5215.

4. Boost Channel L.E.D.

Indicates red when boost channel is selected

5. Volume Control

Controls the volume level of the channel.

6. Tone Control

Controls the amount of bass to treble on boost channel.

- 7. Footswitch Input ON/OFF reverb, boost pedal input.
- 8. Volume Control

Controls level of clean or normal channels.

9. Treble Control

Controls the high frequency content of the channel.

10. Middle Control Controls the middle register of

the channel.

11. Bass Control

Controls the low frequency content of the channel output.

12. Master Reverb Control

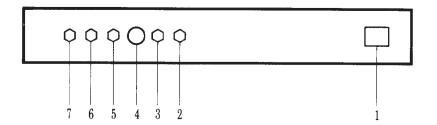
Controls the depth of the reverb effect in total sound output.

Control

13. Master Volume Controls the overall output level of the amplifier.

**Note:** Items 12 & 13 are reversed on Model 5215.

#### Rear Panel Functions 3210



1. Mains Input

Connects amplifier to power supply.

Outputs

2. - 3. Loudspeaker For connection to speakers. giving 100w. into 4 ohms.

4. D.I. Level Control Controls the low level signal output.

5. D.I.Output

Jack socket carrying a low level version of the amplifier output. Suitable for connecting to recording or P.A. mixing desks. or into slave amplifying systems.

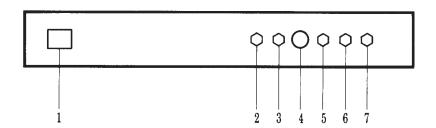
6. Effects Return Socket

7. Effects Send Socket

Return jack from output of external effects unit.

Signal jack to feed the input of external effects unit.

#### Rear Panel Functions 5275, 5215



1. Mains Input

Connects amp to power supply.

2. Extension Speaker Socket

Output for connection to external loudspeaker (8 - 16 ohms only).

3. Headphone Socket

Stereo output for use with headphones.

4. D.I. Level Control Controls the volume of low level output signal.

5. D.I. Slave Jack

Jack socket carrying low level version of amplifier output. Suitable for connecting to

6. Effects Return Socket

7. Effects Send Socket

recording or P.A. mixing desks, or into slave amplifying system.

Return jack from output of external effects unit. Signal jack to feed the input of

external effects unit.

#### Use of Front Panel Controls 3210, 5275, 5215

When the footswitch is removed (socket 7), both channels of the amplifier may be used together. This can give a clean sustained sound, or a mixture of clean and distorted sounds by adjustment of the level controls (3, 5, 8 & 13).

When the boost channel is selected, maximum distortion is achieved by turning controls 3 & 5 full on and selecting the overall volume with Master Volume (13). By decreasing Gain control (3), the amount of distortion is decreased and by lowering volume control (5), the overall volume of the channel is decreased.

The tone control (6), may be used to set the overall tone of the boost channels and gives a very 'punchy' firm sound. For a greater variety of sounds, the Gain/E.Q. control (3), may be pulled outwards to introduce the full range, E.Q. circuit of the other

channel (controls 9, 10 & 11), thus giving a much wider variation of sound.

The 'clean' channel will give a good clear sound when volume control (8), is kept at a lower level than Master Volume control (13). However, a certain amount of overdrive can be achieved by turning control 8 to maximum and control 13 to the required level for overall volume, using the wide ranging tone controls (9, 10 & 11), to 'shape' the sound produced.

It is often a good idea to set the levels of the two channels to create a balance of clean to overdrive. if required, before playing seriously.

Experimentation will provide a wide and extremely varied number of different sounds, which should fulfil the needs of all guitar players, whatever their individual style may be.

Note! Before switching on this unit it must be correctly earthed.

#### Specification 3210

Normal 1.5mV. at 1KHz. sensitivity. E.Q. engaged.

Boost E.Q. cancelled 0.12mV. sensitivity. Overload point - gain max. -1mV.

Gain and volume max, into Master Volume.

Overload point - 0.3mV.

Boost tone - 37dB. at 10KHz.

100Hz. 20dB, mid down. E.Q.

Mid 450Hz. 12dB.

Treble 10KHz. 37dB, mid down.

E.Q. Switch Operative on boost channel when footswitch connected.

Operative on both channels when footswitch disengaged. 11dB, insertion loss in overall gain when E.Q, engaged.

Channel Switching Logic switching L.E.D. indication of boost selection. Dual footswitch for boost and reverb.

Both channels mixable when footswitch disengaged.

Reverb Fully variable accutronics spring line.

Send & Return Approximately 350mV. RMS from 600 ohm Send.

Aproximately 350mV, RMS into 33K Return.

Return socket breaking.

D.I.Output Fully variable unbalanced approximately 1V. RMS maximum.

Power Output Complementary Mosfet design.

> 100 watts RMS into 4 ohm at clipping. 80 watts RMS into 8 ohm — approximately. 50 watts RMS into 16 ohm — approximately.

Power Input 160 VA.

#### Specification 5275

Normal 4mV. at 1KHz. sensitivity. E.Q. engaged.

Boost E.Q. cancelled 0.12mV. sensitivity.

Overload point - gain max. - 1mV.

Gain and volume max, into Master Volume.

Overload point -0.3mV. Boost tone - 37dB, at 10KHz.

E.Q. Bass - 100Hz. 20dB. Mid down.

Mid. -450Hz. 12dB.

Treble = 10KHz. 37dB. Mid down.

Operative on boost channel when footswitch connected. E.Q. Switch

Operative on both channels when footswitch disengaged.

11dB. insertion loss in overall gain when E.Q. engaged.

Channel Switching Logic switching L.E.D. indication of boost selection. Dual footswitch for boost and reverb.

Both channels mixable when footswitch disengaged.

Fully variable accutronics spring line. Reverb

Approximately 350mV. RMS from 600 ohm Send. Send & Return

Approximately 350mV. RMS into 33K Return.

Return socket breaking.

Fully variable unbalanced approximately 1V. RMS maximum. D.I.Output

H.P. Output

Stereo only output. Ext.L.S. To feed 8 – 16 ohm system cancelling internal loudspeaker short circuit protected.

75w. RMS into 8 ohms constant current design. Internal speaker – Power Output

Celestion Sidewinder 150 watt / 8 ohm.

120 VA. Power Input

**Note!** Speaker — VE is not ground. Do not ground speaker connections.

#### Front Panel Functions Model 5213

On/Off for mains power to

Controls the amount of drive

Connects instrument to

and degree of overdrive

Indicates red when boost

treble on boost channel.

Controls the volume level of

Controls the amount of bass to

channel is selected.

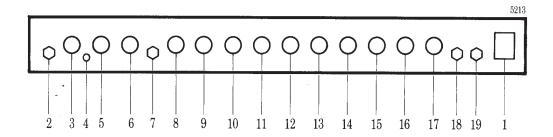
the boost channel.

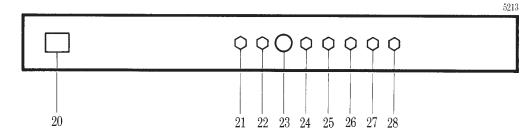
amplifier.

amplifier.

required.

#### Rear Panel Functions Model 5213





Mains	Power
Switch	

2. Input Jack Socket

3. Gain Control

4. Boost Channel L.E.D.

5. Volume Control

6. Tone Control

7. Footswitch Input Input for On/Off reverb, boost

pedal. 8. Volume Control Controls the volume level of clean or 'normal' channel. 9. Treble Control Controls the high frequency content of the channel. 10. Middle Control Controls the low frequency content of the channel output. 11. Bass Control

content of the channel output.

Control

Control

14. Bass Control (Channel B)

15. Middle Control (Channel B)

16. Treble Control (Channel B)

(Channel B) 18. Input Jack Socket (-6dB)

19. Input Jack Socket (0dB) Controls the low frequency

12. Master Volume Controls the overall output level of the amplifier.

13. Master Reverb Controls the depth of reverb effect on all channels.

> Controls the lower frequency content of Channel B.

Controls the middle register of Channel B.

Controls the high frequency content of Channel B.

17. Volume Control Controls the overall volume level of Channel B.

> Connects instrument to Channel B of amplifier. (Low sensitivity input).

Connects instrument to Channel B of amplifier. (High sensitivity output). 20. Mains Input

21. Extension Speaker socket

22. Headphone Socket

23. Line-out Level Control

24. Line-out Socket

Connects amplifier to power supply.

Output for connection to external loudspeaker.

Stereo output for use with headphones, (always ensure that the amp is switched off before plugging in headphones).

Controls the level of signal from line-out socket, (item 24).

Jack socket carrying low level version of amplifier output. Suitable for connecting to recording or P.A. mixing desks or into slave amplifying system. Return Socket

26. Master Effects Send Socket

27. Effects Return Socket (Channel A)

28. Effects Send Socket (Channel A)

25. Master Effects Return jack from output of external effects unit. (Operative on Channels A and B).

> Signal jack to feed the input of external effects unit. (Operative on Channels A and B).

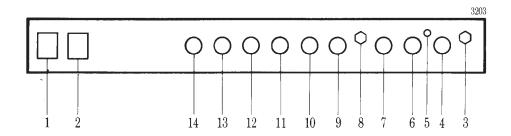
Return jack from output of external effects unit. (Operative on Channel A only).

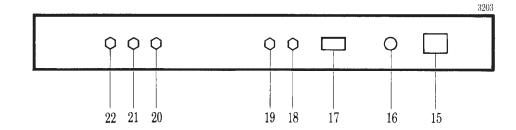
> Signal jack to feed the input of external effects unit.

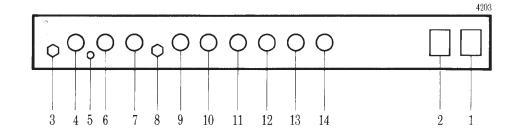
> (Operative on Channel A only).

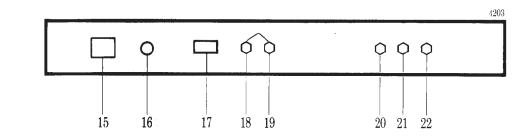
#### Front Panel Functions Models 3203 and 4203

#### Rear Panel Functions Models 3203 and 4203









1.	Mains Power
	Switch

Socket

L.E.D.

4. Gain Control

5. Boost Channel

amplifier. 2. Standby Switch Controls H.T. supply to amp

valves. Allows the filaments to remain heated during breaks.

On/Off for mains power to

3. Input Jack Connects instrument to amplifier.

> Controls the amount of drive and degree of overdrive required.

Indicates red when boost channel is selected.

6. Volume Control Controls the volume level of the channel.

7. Tone Control Controls the amount of bass to treble on the boost channel.

8. Footswitch Input Input for On/Off reverb, boost pedal.

9. Volume Control Controls the level of the 'normal' channel.

10. Treble Control For adjusting the high frequency content of the channel.

11. Middle Control For adjusting the middle register of the channel.

12. Bass Control For adjusting the low frequency content of the channel.

13. Master Volume Controls the overall output Control level of the amplifier.

14. Master Reverb Control

15. Mains Input Socket

Connects amplifier to power supply. 16. Fuse

Refer to rear label of amp for correct value. USE CORRECT FUSE ONLY.

17. Output Selector Matches amplifier output Switch transformer impedance to loudspeaker impedance,

18,19. Loudspeaker Parallel connected jack sockets Jacks for loudspeaker connections.

i.e. 4 or 8 ohm.

20. Line-out Jack

Jack socket carrying low level version of amplifier output. Suitable for connecting to recording and P.A. mixing desks, or into slave amplifying system.

21. Effects Return Socket

22. Effects Send Socket

Signal jack to feed the input of external effects unit.

Return jack from output of

external effects unit.

Controls the depth of reverb effect in total sound output.

12

13