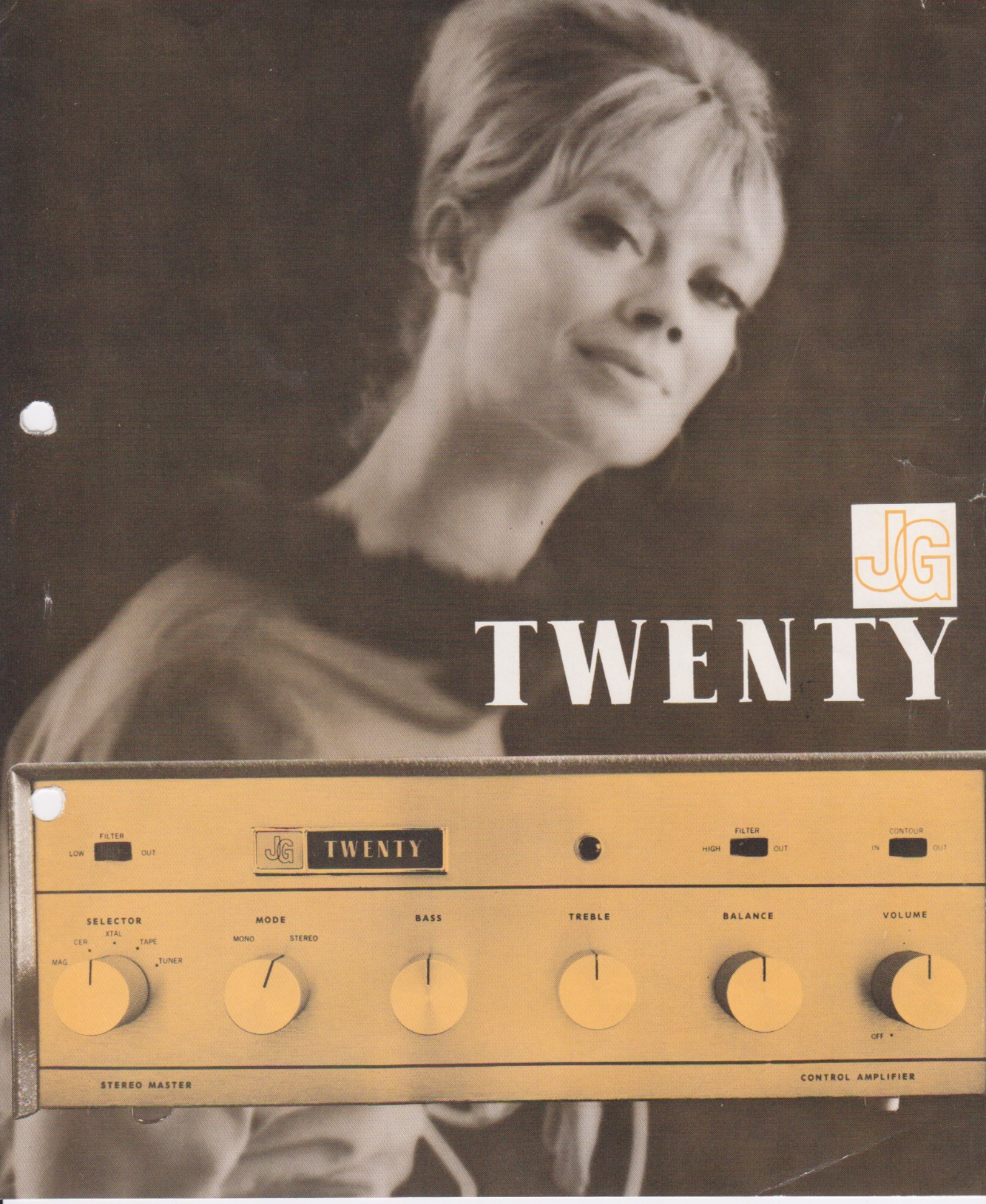

JG
TWENTY
FILTER
LOW
OUT
JG
TWENTY
FILTER
HIGH
OUT
CONTOUR
IN
OUT
SELECTOR
XTAL
CER
TAPE
MAG
TUNER
MODE
MONO
STEREO
BASS
TREBLE
BALANCE
VOLUME
OFF
STEREO MASTER
CONTROL AMPLIFIER

Dynamic Power

Where wide frequency response, low distortion and noise levels, and ample dynamic power range are the hallmarks of quality: more important, your specified guarantee of the utmost in musical enjoyment. For the non-technical, the minimum technical specifications can be briefly stated – Frequency response of 30 to 17000 cycles per second; Total Harmonic Distortion below 1%; Hum and Noise level better than 50db; and now Power Level, the most misinterpreted and most misrepresented of all published specifications. While music is often played at a level of only fractions of a watt, and anything over 1 watt of power as an average, fed into the speakers, does represent quite loud listening, we must remember that peaks of power even at an average of 1 watt can in fact reach 30 watts and beyond. Now music is an emotional experience, and in many symphonies for example, there are great climaxes – tremendous fortissimo passages, which must be handled by the amplifier without strain if the full beauty of this experience is to be realised. Critical listening tests, the final arbiter, have shown then that an amplifier rated at 8 watts R.M.S. per channel is just barely justified in rating the name High Fidelity. 10 watts or greater is to be preferred and the final selection is of course regulated by financial requirements. The above figures however, can be used quite safely for general guidance.

Power Bandwidth: the above comments and suggested requirements for power ratings and distortion figures, of course, hold good at all frequencies, not just at some arbitrary centre frequency. An amplifier can be, (and very often is) rated only at either 400 or 1000 cycles while its frequency response is measured at 1 watt or worse still, 1 volt output. In such a case the frequency range at **full power** is likely to be very much less than specified, or conversely, the total power available at low or high frequencies may only be a portion of that stated at 100 cycles, while the distortion may have climbed to three or four times that claimed. The only way to overcome this is to have the manufacturers specifications of the frequency range over which the amplifier can maintain full power within a given distortion figure, e.g. 8 watts, R.M.S. 40-17000 cycles @ 1.5%. This is called **power bandwidth** and is a rating finding favour with the world's leading manufacturers, as it tells more of the basic story than any number of spot-check specifications which simply state Output Power . . . xx watts frequency response xxxx cycles Distortion X%. Such figures are unrelated to each other and are even difficult to check as the necessary parameters are not stated. Worse, these figures lead unwary into assuming that they hold good over the full range.

A A 26138

Features

Mode switch selects either Stereo or Mono operation. Power on/off switch on volume control. Selector switch selects inputs from Tape, Tuner and Phono-Xtal, Ceramic or Magnetic allowing the use of various cartridges without altering input plugs. Tape output independent of volume control available on back panel.

Finish Elegant Gold front panel with brushed finish. Hard wearing grained case in attractive Morocco Beige.

Dimensions 13" x 4½" x 10½" overall.

JG

Technical Specifications

Power Output	*20 watts R.M.S. or better.*
Hum & Noise Level	*–75 db on high level inputs. Better than 55 db on magnetic (below rated output).*
Frequency Response	*10 to 20000 cycles per second±1db referred to 1 watt.*
Distortion	*Total Harmonic Distortion 0.3% Intermodulation 0.8% (at rated power and 1 K/C).*
Power Bandwidth	*29 to 18000 cycles ±1 db within 1% T.H.D.*
Channel Separation	*Better than 45 db.*
Sensitivity	*High Level Inputs 150 mv., Ceramic 80 mv., Magnetic 2.5 mv.*
Tone Controls	*+15 db — 15 db at 50 cycles per second. +14 db — 16 db at 1000 cycles per second.*
Volume Control	*Approaches Fletcher Munson curve at low listening levels.*
Rumble Filter	*More than 13 db per octave.*
Scratch Filter	*More than 10 db per octave.*

John Gilbert & Co. Ltd.
Tasman Building, Anzac Ave. Auckland. Ph. 20-8

THE JG TWENTY

20 Watt Integrated Stereo Amplifier

OPERATING INSTRUCTIONS

Important. Ensure that all connections are correctly made in accordance with installation procedures detailed.

1. Set all slide switches to normal position. i.e. to the right.
2. Adjust Bass, Treble, and Balance controls to mid position.
3. Switch Mode Selector to Stereo for records, or to Mono for single channel inputs. e.g. radio or mono tape.
4. Select required signal source with Main Selector Switch.
5. Turn Volume control clockwise to first click only. The Pilot Lamp will now be glowing.
6. Allow approximately 20 seconds for warming up and then advance Volume Control until desired level is reached.

FEATURES

With the controls set as above a flat frequency response will be obtained and the Magnetic Phono correctly compensated for the R.I.A.A. characteristic.

Bass & Treble Controls, allow independent increase or decrease of bass, and treble response to suit individual requirements.

Loudness Contour Switch, when moved to the left automatically compensates for inefficiency of the ear at low volume levels by the gradual increase of bass and treble response as the volume is decreased from the control mid point, while having no effect when the control is operated above this level. With the contour switch at 'out' a level response is maintained.

Balance Control, allows the adjustment of relative volume between the two stereo channels to suit various listening positions, and may require some adjustment with wide alterations of the Volume Control setting.

Mode Switch may be used in either position for mono records according to individual taste, but when using a single channel input such as, radio, T.V., etc will give single speaker operation in the Stereo position, and dual channel operation with improved quality in the Mono position.

Main Selector Switch selects Radio, Tape, or any of three types of phono cartridge, without any alteration of input plugs on the rear panel. Television sound or any other audio signal may be fed into either tape or tuner inputs if these are not

otherwise used, or maybe incorporated in the tuner input by fitting a separate selector switch in the line.

High (scratch) Filter effectively reduces the undesirable hissing or scratching sound associated with old or worn records without the alteration of the entire treble range which occurs when turning down the treble control.

Low (rumble) Filter has a similar action to above but in respect to the low frequencies e.g. turntable rumble. Both the above controls may be used in conjunction with the normal Bass and Treble controls to give varying degrees of attenuation.

Tape Recording is accomplished by connecting to the sockets provided on the rear panel of the amplifier, and is suitable for either Mono or Stereo recordings. The signal at this point is constant and is unaffected by alteration of the Volume or Tone controls of the Amplifier, thus ensuring constant characteristics on all your recordings. This also allows the use of front panel controls for normal listening while taping is in progress.

INSTALLATION

The amplifier can be placed to give the greatest operating convenience—on a chairside table, bookshelf etc., or in a conventional radio cabinet. We recommend that the record player be within 10ft. of the amplifier. The speakers should be located to suit the room acoustics, but neither should be in the same cabinet as either the amplifier or the record player.

Panel Mounting: When mounting the unit behind a panel either vertically or horizontally it is best to remove the self-cabinet by unscrewing the four sheet metal screws on the side and lifting the cabinet upwards. The Gold front panel will then mount flush with the rear of your cabinet panel and adequate ventilation will be ensured.

Ventilation is neccessary for the long life of components and therefore the plastic feet should **not** be removed unless adequate ventilation holes are provided in the shelf on which the unit rests.

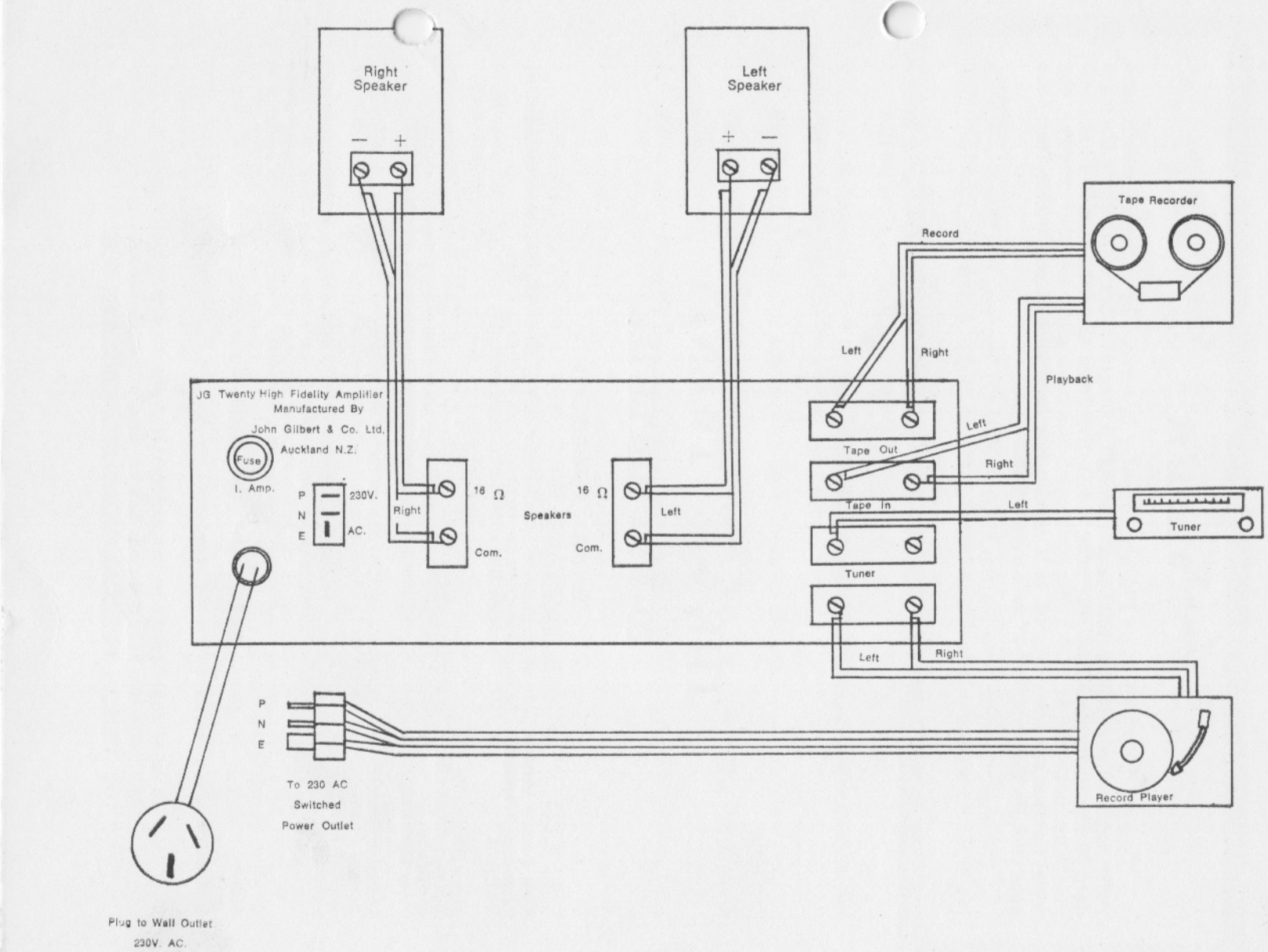
Electrical Connections should be made in accordance with the diagram on opposite page with attention to the following:

1. Speakers should be correctly phased by connecting the positive speaker terminal to the amplifier terminal marked 16 ohms. Up to approximately 25ft. of either plastic covered lighting flex, or T.V. antenna ribbon may be used, but for greater distances a heavier cable is recommended.

2. All input leads and tape output leads must be in screened cable with correctly soldered joints and shielded pin plugs. It is recommended that the power take-off socket provided on the rear panel be used for the turntable mains supply.

3. Input impedances of 68K for Magnetic, 2 Meg for Ceramic and 1 Meg for Xtal are provided and are suitable for most commonly used cartridges. However this may be lowered if required by using an external parallel resistance, and may be increased (with some fall off in sensitivity) with a series resistance.

4. **Headphones:** Many Stereo Headphones are supplied with appropriate junction boxes which may be connected to the amplifier output terminals. If it is desired to use types without junction boxes it is recommended that a box be procured or that your local supplier be consulted concerning the correct connections to be made to the amplifier.


Right Speaker
Left Speaker
Tape Recorder
Record
Left
Right
Playback
JG Twenty High Fidelity Amplifier
Manufactured By
John Gilbert & Co. Ltd.
Auckland N.Z.
Fuse
1. Amp.
P
N
E
230V.
AC.
16 Ω
Right
Com.
Speakers
16 Ω
Left
Com.
Tape Out
Tape In
Tuner
Tuner
Left
Right
Left
Right
Left
Tuner
P
N
E
To 230 AC
Switched
Power Outlet
Record Player
Plug to Wall Outlet
230V. AC.

A288/1068

WARRANTY

Your JG TWENTY High Fidelity Amplifer is covered by a twelve month warranty against defective material or workmanship (except tubes which carry the standard 90 day warranty.) This warranty is effective from the date of sale to the original purchaser and is void if the equipment has been altered in any manner, the serial number has been defaced, or if service has been carried out (other than that approved by the supplier or authorized agent).

The manufacturer reserves the right to change, improve, or otherwise modify his products without obligation to install same on models previously manufactured.

THE JG TWENTY

20 Watt AMPLIFIER

Technical Specifications

Power Output	:	**20 watts R.M.S. or better**
Hum & Noise Level	:	–75 db on high level inputs. Better than 55 db on magnetic (below rated output).
Frequency Response	:	10 to 20000 cycles per second ± 1 db referred to 1 watt.
Distortion	:	Total Harmonic Distortion 0.3%, Intermodulation 0.8% (at rated power and 1 K/C).
Power Bandwidth	:	29 to 18000 cycles ± 1 db within 1% T.H.D. at rated output.
Channel Separation	:	Better than 45 db.
Sensitivity	:	High Level Inputs 150 mv., Ceramic 80 mv., Magnetic 2.5 mv.
Tone Controls	:	+ 15 db — 15 db at 50 cycles per second. + 14 db. — 16 db. at 10000 cycles per second.
Loudness Contour	:	Approaches Fletcher Munson curves at low listening levels.
Rumble Filter	:	More than 13 db per octave.
Scratch Filter	:	More than 10 db per octave.
Features	:	Mode switch selects either Stereo or Mono operation. Power on/off switch on volume control. Selector switch selects inputs from Tape, Tuner and Phono-Xtal, Ceramic or Magnetic allowing the use of various cartridges without altering input plugs. Tape output independent of volume control available on back panel.
Finish	:	Elegant Gold front panel with brushed finish. Hard wearing grained case in attractive Morocco Beige.
Dimensions	:	13" x 4½" x 10½" over all.

JOHN GILBERT & CO. LTD.
TASMAN BUILDING, ANZAC AVE. AUCKLAND, N.Z.

THE JG TWENTY

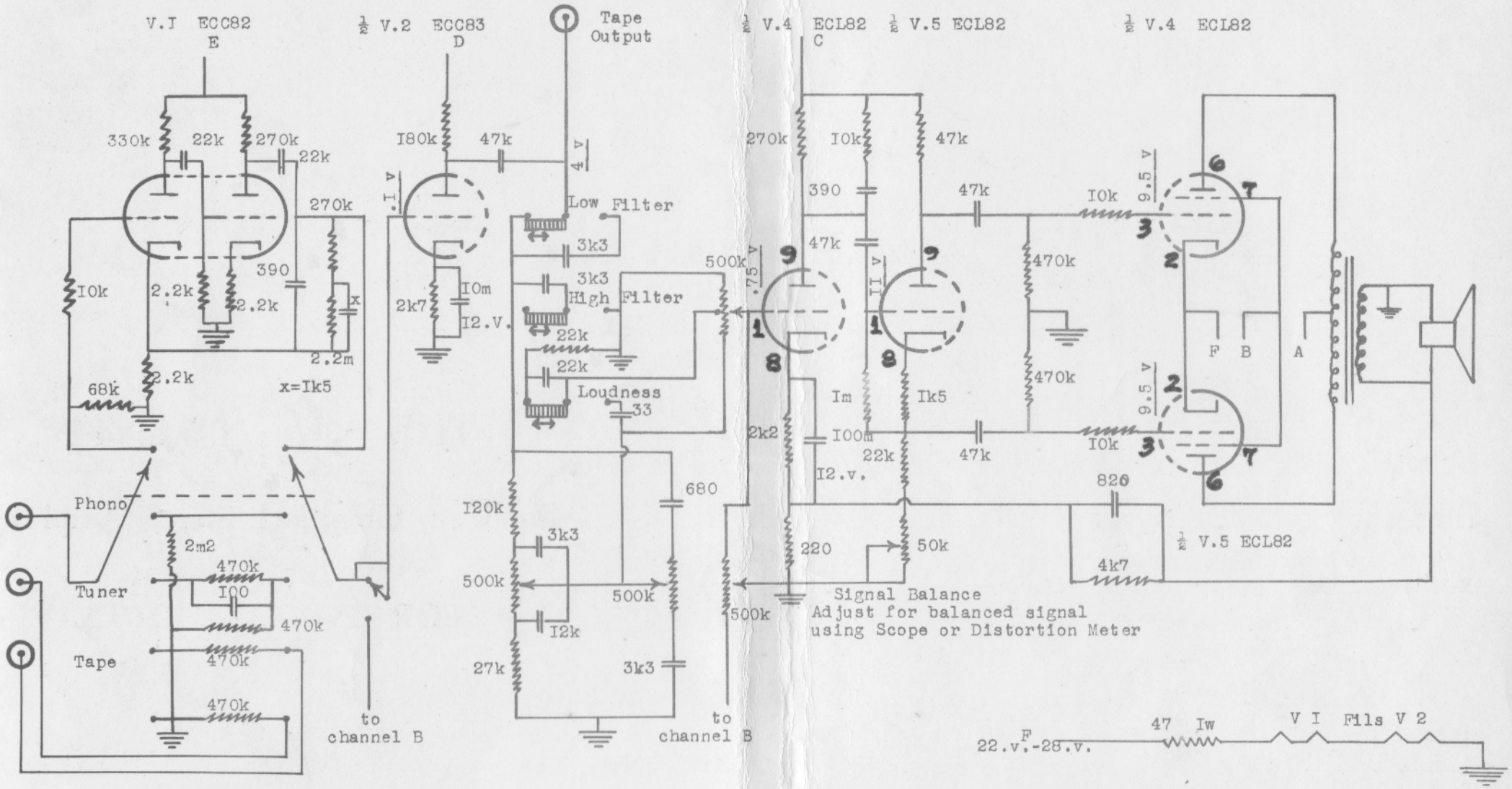
20 Watt Integrated Stereo Amplifier

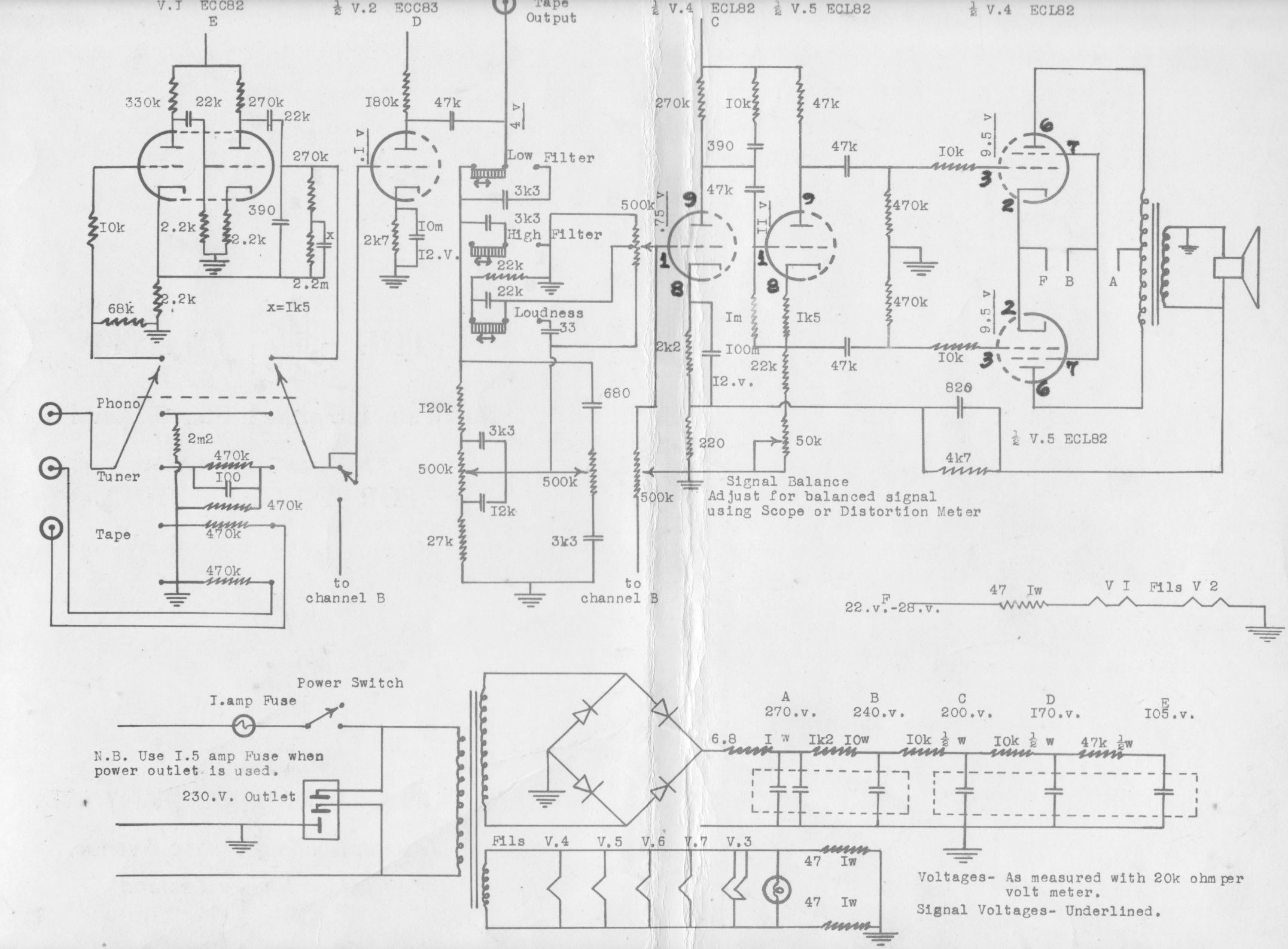
SCHEMATIC DIAGRAM
FOR EXPORT MODEL

Manufactured by

JOHN GILBERT & COMPANY LTD.

Tasman Building, Anzac Avenue,
Auckland, New Zealand


V.I ECC82
E
½ V.2 ECC83
D
Tape Output
½ V.4 ECL82
C
½ V.5 ECL82
½ V.4 ECL82
330k
22k
270k
22k
270k
390
10k
2.2k
2.2k
2.2m
x
x=1k5
68k
2.2k
Phono
Tuner
Tape
2m2
470k
100
470k
470k
470k
to channel B
180k
47k
4 v
.1 v
2k7
10m
12.v.
Low Filter
3k3
3k3
High Filter
22k
22k
Loudness
33
680
120k
3k3
500k
500k
12k
27k
3k3
500k
to channel B
270k
10k
47k
390
47k
47k
.75 v
11 v
1
8
9
2
Im
1k5
2k2
100m
12.v.
22k
47k
470k
470k
10k
10k
6.5 v
6.5 v
F
B
A
820
4k7
½ V.5 ECL82
220
50k
Signal Balance
Adjust for balanced signal
using Scope or Distortion Meter
22.v.-28.v.
F
47 1w
V 1 Fils V 2
Power Switch
1.amp Fuse
N.B. Use 1.5 amp Fuse when
power outlet is used.
230.V. Outlet
A
270.v.
B
240.v.
C
200.v.
D
170.v.
E
105.v.
6.8 1 w
1k2 10w
10k ½ w
10k ½ w
47k ½w
Fils V.4 V.5 V.6 V.7 V.3
47 1w
Voltages- As measured with 20k ohm per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D
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½ V.4 ECL82
C
½ V.5 ECL82
½ V.4 ECL82
330k
22k
270k
22k
270k
390
10k
2.2k
2.2k
2.2k
x
2.2m
68k
2.2k
x=1k5
Phono
Tuner
Tape
2m2
470k
100
470k
470k
470k
to channel B
180k
47k
4 v
1.1 v
2k7
10m
12.v.
Low Filter
3k3
3k3
High Filter
22k
22k
Loudness
33
680
120k
3k3
500k
500k
12k
27k
3k3
500k
to channel B
270k
10k
47k
390
47k
47k
.75 v
11 v
2k2
100m
12.v.
22k
47k
470k
470k
Im
1k5
220
50k
500k
Signal Balance
Adjust for balanced signal
using Scope or Distortion Meter
10k
9.5 v
9.5 v
10k
10k
F
B
A
820
4k7
½ V.5 ECL82
22.v.-28.v.
F
47 Iw
V I Fils V 2
Power Switch
I.amp Fuse
N.B. Use I.5 amp Fuse when
power outlet is used.
230.V. Outlet
Fils V.4 V.5 V.6 V.7 V.3
47 Iw
47 Iw
A
270.v.
B
240.v.
C
200.v.
D
170.v.
E
105.v.
6.8 I w
1k2 10w
10k ½ w
10k ½ w
47k ½w
Voltages- As measured with 20k ohm per
volt meter.
Signal Voltages- Underlined.