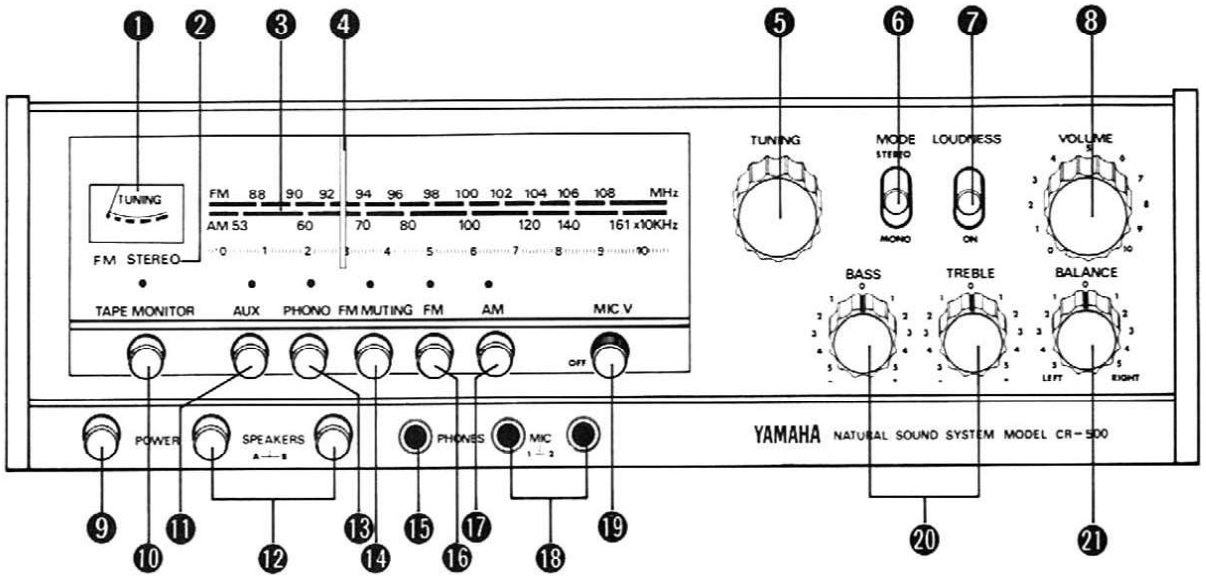
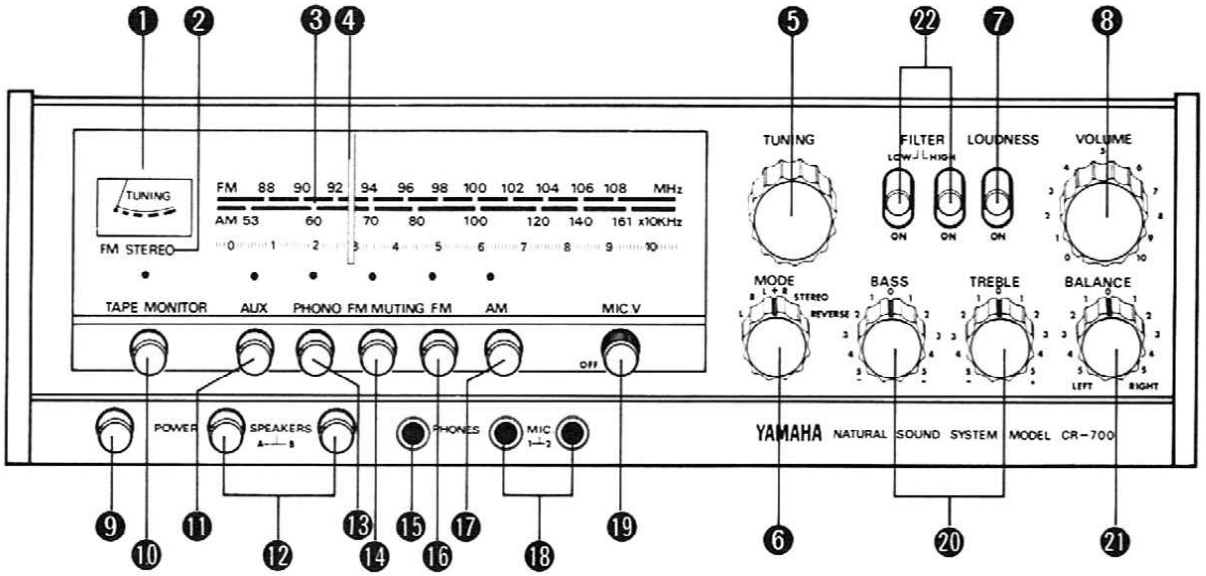
CR-500/700

FM/AM STEREO RECEIVER

CR-500



CR-700



❶ TUNING METER
❷ FM STEREO INDICATOR
❸ DIAL SCALE
❹ DIAL POINTER
❺ TUNING KNOB
❻ MODE SELECTOR
❼ LOUDNESS SWITCH
❽ VOLUME CONTROL
❾ POWER SWITCH
❿ TAPE MONITOR SWITCH
⓫ AUX SWITCH
⓬ SPEAKERS SELECTOR
⓭ PHONO SWITCH
⓮ FM MUTING SWITCH
⓯ HEADPHONE JACK
⓰ FM SWITCH
⓱ AM SWITCH
⓲ MICROPHONE JACK 1, 2
⓳ MIC. VOLUME CONTROL
⓴ BASS & TREBLE CONTROL
㉑ BALANCE CONTROL
㉒ LOW & HIGH FILTER SWITCH

SPECIFICATIONS

AMPLIFIER SECTION	CR-500	CR-700
Dynamic Power (IHF) at 1kHz:	60W	120W
RMS Power at 1kHz:	22/22W	40/40W
Harmonic Distortion at 1kHz:	0.05% at 20W	0.05% at 35W
IM Distortion (70Hz: 7kHz, 4 : 1):	0.1% at 20W	0.1% at 35W
Power Bandwidth (distortion 0.5% const., IHF):	18 ~ 46,000Hz	10 ~ 56,000Hz
Sensitivity (for rated output at 8Ω)		
PHONO 1, 2:	3mV, 50kΩ	3mV, 50kΩ
AUX, TAPE PB (PIN), REC/PB (DIN):	200mV, 50kΩ	200mV, 50kΩ
MAIN IN:	775mV, 50kΩ	775mV, 50kΩ
MIC:	4mV, 50kΩ	4mV, 50kΩ
Output Terminals and Jacks		
Speakers:	A, B, A + B	A, B, A + B
Stereo Headphone Jack:	1	1
PRE OUT:	775mV, 10kΩ	775mV, 10kΩ
REC OUT (PIN):	200mV, 10kΩ	200mV, 10kΩ
REC/PB (DIN):	30mV, 80kΩ	30mV, 80kΩ
Frequency Response		
PHONO:	30 ~ 15,000Hz, ±0.5dB	30 ~ 15,000Hz, ±0.5dB
AUX, TAPE PB, REC/PB:	30 ~ 30,000Hz, +1, −3dB	20 ~ 30,000Hz, +1, −3dB
MAIN IN:	15 ~ 50,000Hz, +0, −3dB	15 ~ 50,000Hz, +1, −3dB
Damping Factor:	40 at 8Ω, 1kHz	50 at 8Ω, 1kHz
Tone Controls		
Bass:	±10dB at 70Hz	±10dB at 70Hz
Treble:	±10dB at 10kHz	±10dB at 10kHz
Filters		
Low:	—	−3dB at 70Hz, 6dB/oct
High:	—	−3dB at 7kHz, 6dB/oct
Loudness Control:	+8dB at 70Hz, +6dB at 10kHz	+8dB at 70Hz, +6dB at 10kHz
Channel Separation PHONO, AUX, TAPE PB, REC/PB:	50dB at 1kHz	50dB at 1kHz

FM TUNER SECTION		
Frequency Range	88 ~ 108MHz	88 ~ 108MHz
Usable Sensitivity, IHF:	2.0μV	1.7μV
Harmonic Distortion mono:	0.3%	0.2%
stereo:	0.5%	0.4%
S/N Ratio:	70dB	70dB
Alternate Channel Selectivity, IHF:	70dB	80dB
Capture Ratio, IHF:	1.5dB	1.5dB
Image Frequency Rejection:	55dB	90dB
Stereo Separation:	40dB	45dB

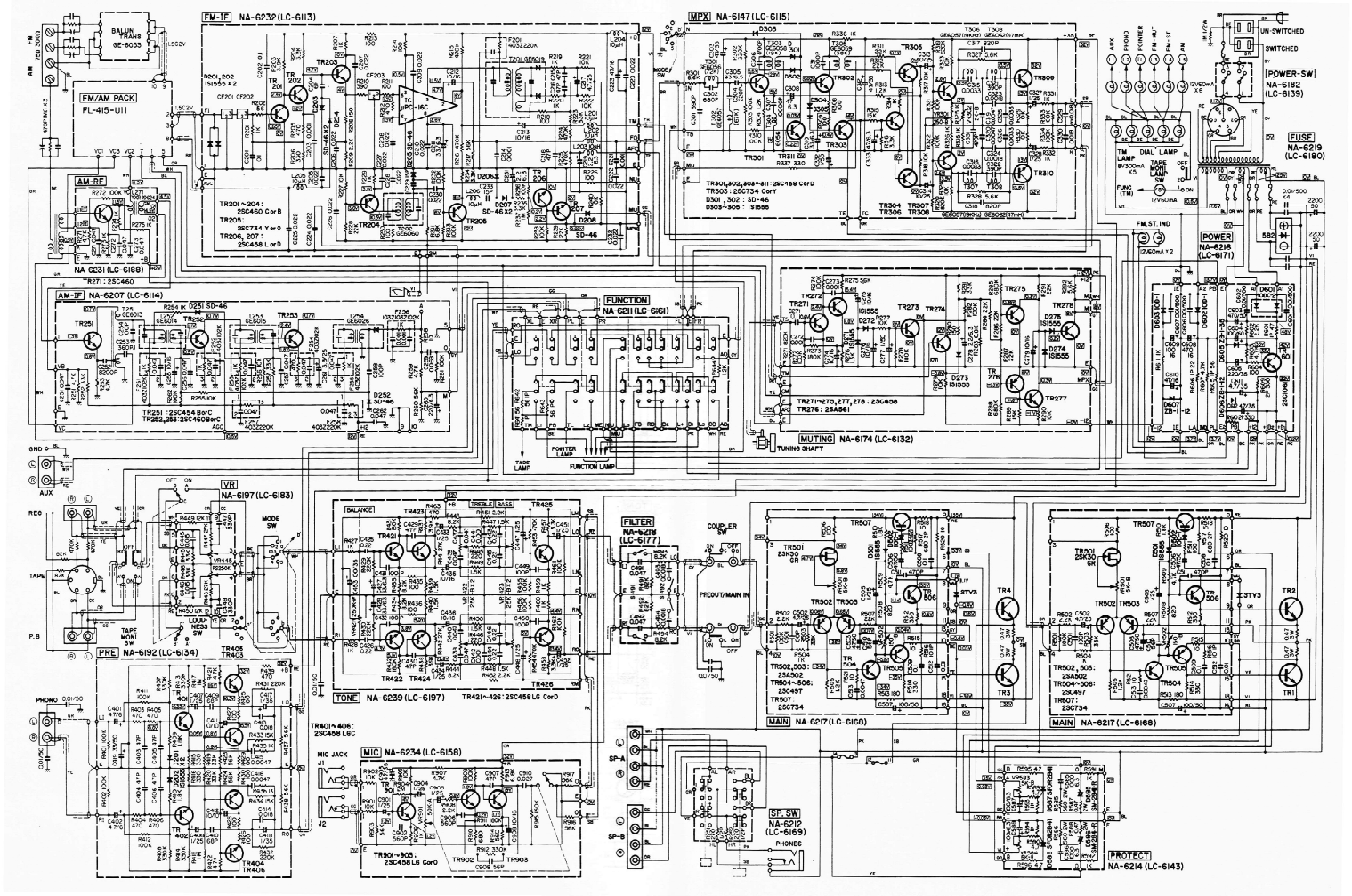
AM TUNER SECTION		
Frequency Range	530 ~ 1605kHz	530 ~ 1605kHz
Usabel Sensitivity, IHF:	20μV	15μV
Image Frequency Rejection:	40dB	70dB
Selectivity:	25dB	30dB

GENERAL		
Power Sources: (*)	100,110,117,125,220,240V(switchable)	100,110,117,125,220,240V(switchable)
Power Consumption, Max.	120W	180W
Dimensions (W x D x H):	420(16½") x 300(11¾") x 140mm(5½")	420(16½") x 300(11¾") x 140mm(5½")
Weight:	9.0kg (19.8 lbs.)	9.5kg (21.5lbs.)

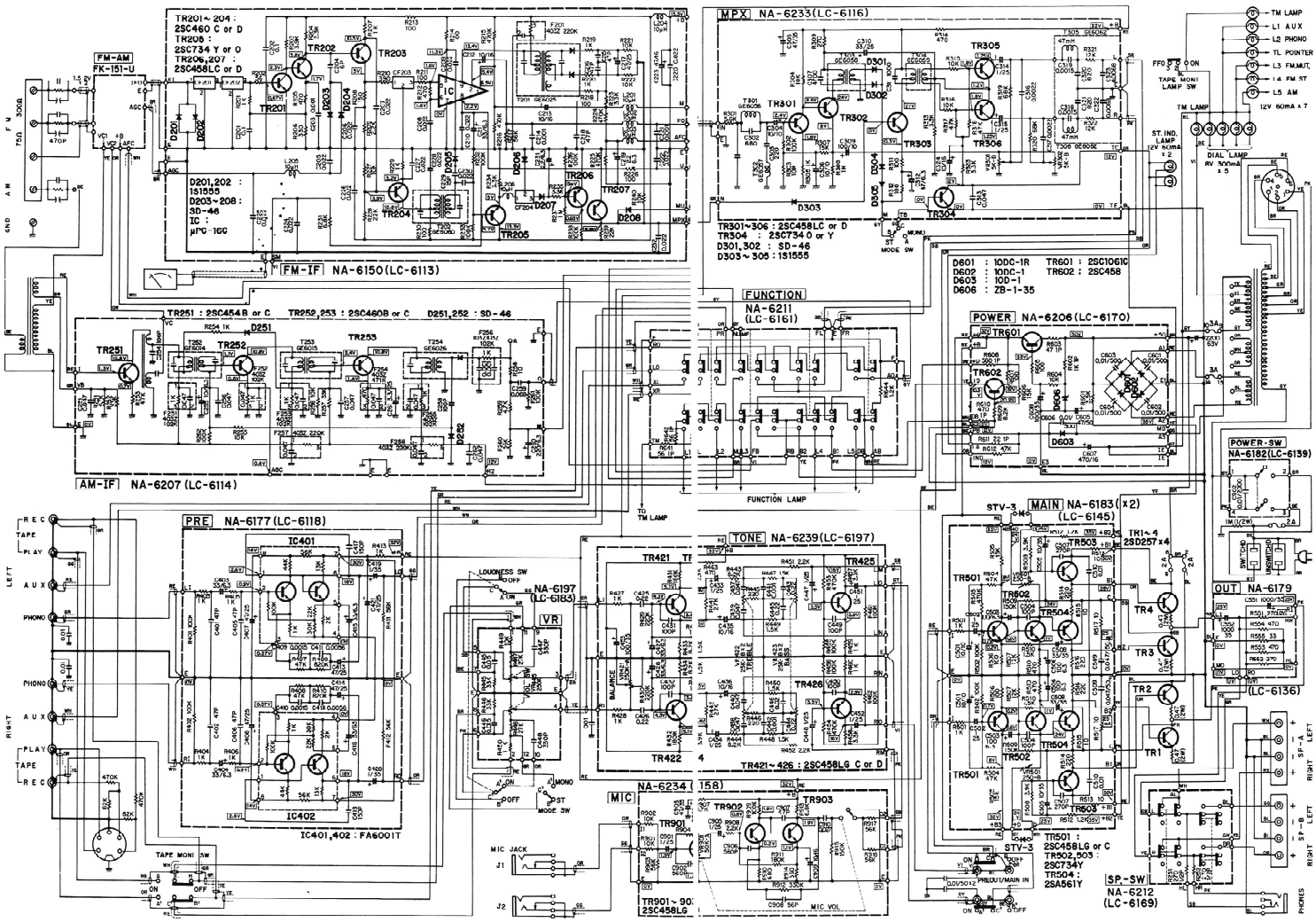
(*) Australian models, 240V only.

Specifications subject to change without notice.

■CR-700 SCHEMATIC DIAGRAM

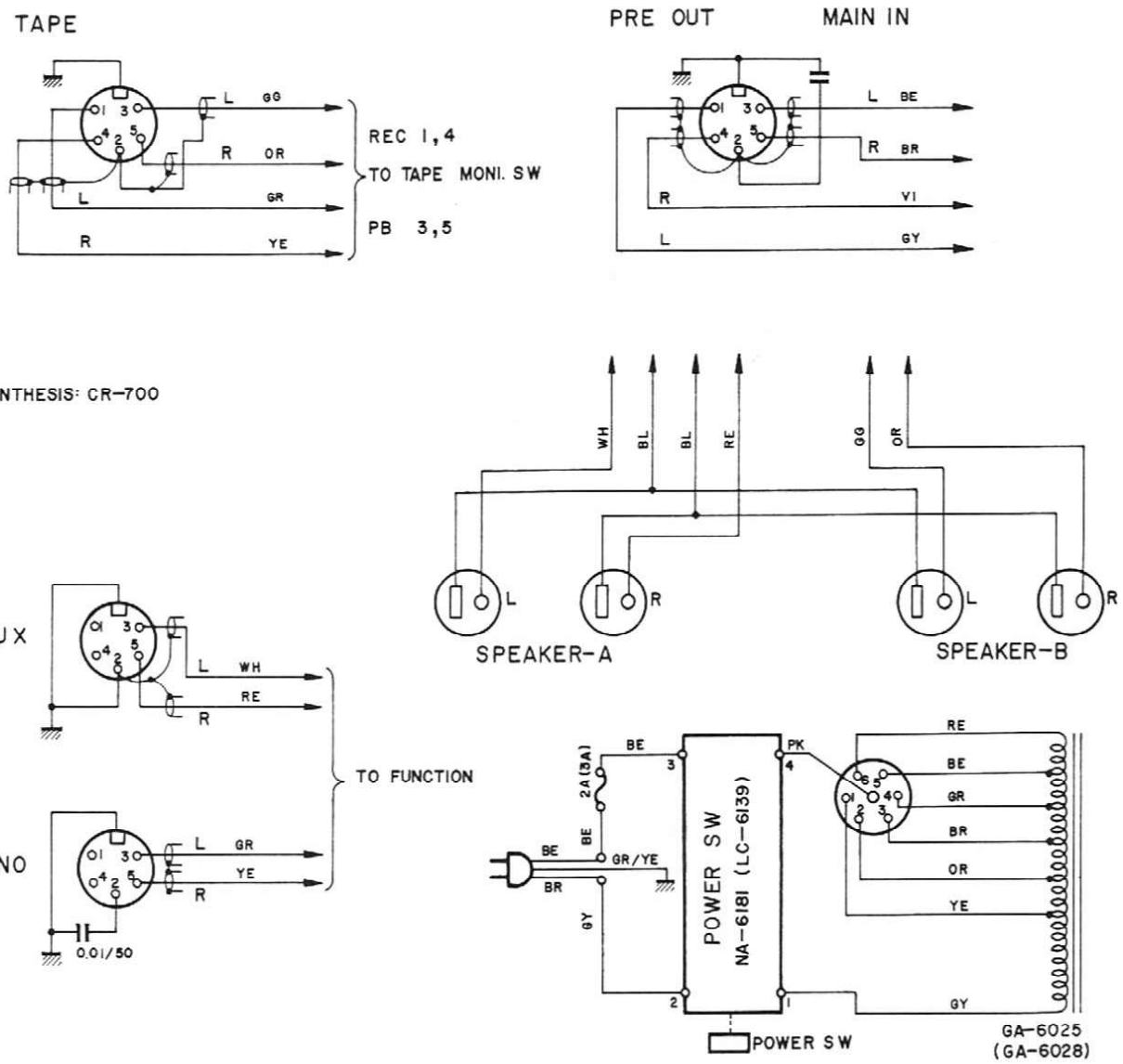


■CR-500 SCHEMATIC DIAGRAM

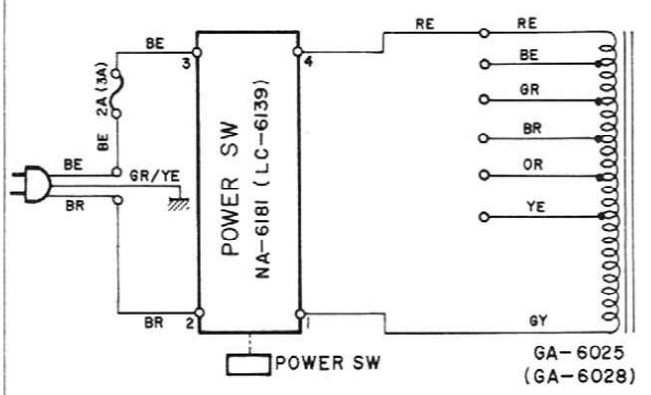


■EUROPEAN, SOUTHAFRICAN, AUSTRALIAN MODELS SPECIFICATION

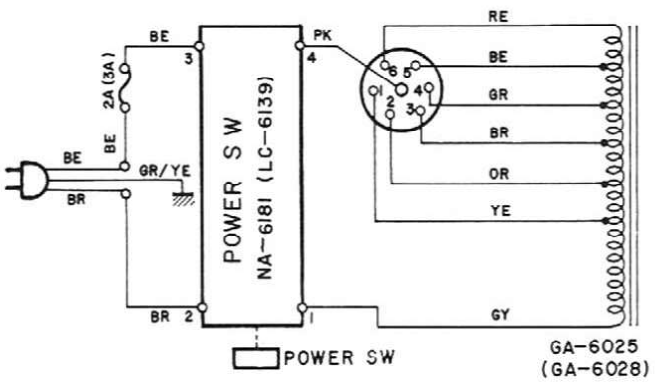
EUROPEAN MODELS



AUSTRALIAN MODELS



SOUTH AFRICAN MODELS



■MEASUREMENT AND ADJUSTMENT

CR-700 MAIN CIRCUIT BOARD

STEP	ITEM	INSTRUMENT REQUIRED	CONNECT TO	ADJUST	ADJUST FOR OR HOW TO ADJUST	STANDARD VALUE	REMARKS
1	Confirmation of power supply voltage.	V.T.V.M. or tester.	Main circuit board connector terminals; No. 18 and grounding terminal (No. 7 or No. 17) No. 5 and grounding terminal (No. 7 or No. 17)		−35V +35V	−35V ± 2V 35V ± 2V	
2	Midpoint voltage.	V.T.V.M. or tester.	Main circuit board connector terminals: No. 11 or No. 12 and grounding terminal (No. 7 or No. 17)	VR501 (5kΩ B)	Turn VR501 slowly clockwise or counterclockwise to obtain 0V.	0V ± 30mV	Refer to Fig. 9 Connect load resistance of 8Ω. Adjust unit to "no signal in" position.
3	Idling current.	V.T.V.M. or tester.	Main circuit board connector terminals: No. 11 and No. 10. (Or both ends of the 0. 47Ω resistor.)	VR502 (150Ω B)	Adjust VR502 slowly until 23.5mVs are indicated. Insure unit midpoint voltage (step 2) has been set to 0V. Leave unit on for one minute or so, repeat Steps 2 and 3.	23.5mV ±4.7mV (Current, 50mA ±10mA)	Refer to Fig. 9 Current through 0.47Ω resistor may be measured instead.

STEP	ITEM	INSTRUMENT REQUIRED	CONNECT TO	ADJUST	ADJUST FOR OR HOW TO ADJUST	STANDARD VALUE	REMARKS
4	Max. Output: Distortion, Gain.	AF sig. gen. Freq: 1kHz; Distortion factor: less than 0.1%. Level Meter with dB calibration. Distortion factor meter, (capable of measuring up to 0.1%).	Refer to Fig. 2		Increase output of AF sig. gen. to 28dBm. Insure distortion meter indicates less than 1%. Confirm amplifier input signal remains at 0dBm. (± 2dBm)	Max. output, 28dBm. Distortion factor, less than 1%. Input signal level, 0 ± 2dBm.	
5	Frequency response characteristics.	same as Step 4 above	Refer to Fig. 2		Increase AF sig. gen. output. Adjust amp. input signal level so that output level is 24dBm at 1kHz. Maintaining input level, change freq. by 30Hz to 30 kHz. Insure output remains within limits of standard value.	Output, 24dBm +0 dB, −3dB at 30Hz to 30kHz.	

CR-700 PROTECTOR CIRCUIT BOARD

STEP	ITEM	INSTRUMENT REQUIRED	CONNECT TO	ADJUST	ADJUST FOR OR HOW TO ADJUST	STANDARD VALUE	REMARKS
1	Operating level adjustment.	IF sig. gen. (Freq: 1kHz), V.T.V.M. and oscilloscope.	Main in and speaker terminals. (Refer to Fig.12.)	VR583 (5k B)	Connect load resistance of 4Ω/100W (one channel only). Increase output of LF sig. gen. to insure protector circuit operates when amp. output is 60 to 90Ws).	Starts operating at 60 to 90W output.	This adjustment is performed during overload conditions and should be completed as quickly as possible.

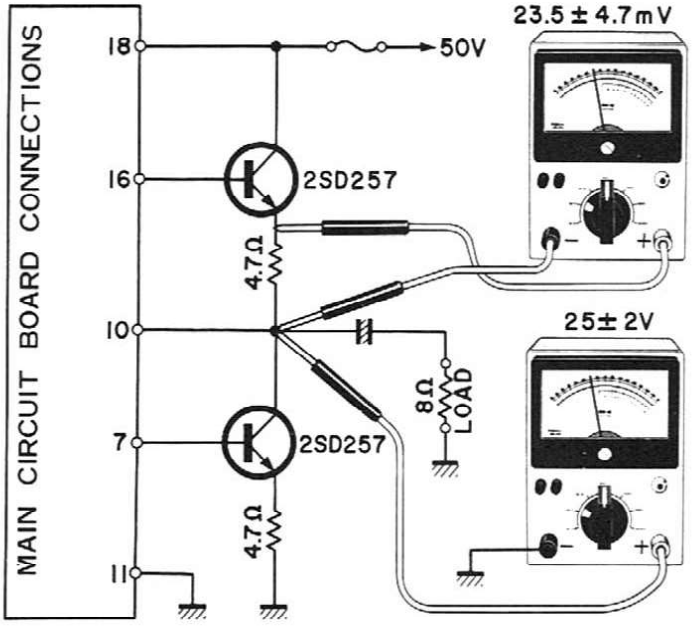


Fig. 11

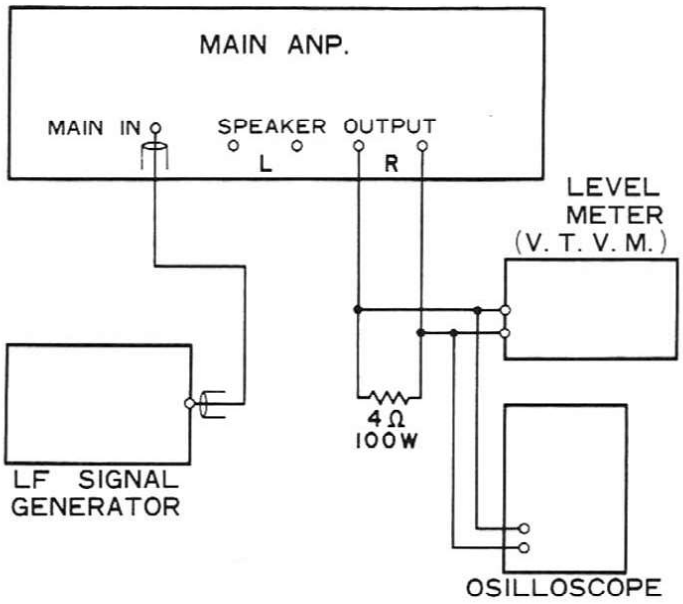


Fig. 12

CR-500 MAIN CIRCUIT BOARD

STEP	ITEM	INSTRUMENT REQUIRED	CONNECT TO	ADJUST	ADJUST FOR OR HOW TO ADJUST	STANDARD VALUE	REMARKS
1	Power supply voltage measure-ments.	V.T.V.M. or tester.	Main circuit board connector terminals: No. 14 and No. 11 (ground) No. 18 and No. 11 (ground) No. 5 and No. 11 (ground)		 50V 32V 30V	 50 V ± 2V 32 V ± 2 V 30 V ± 2 V	
2	Idling current	V.T.V.M. or tester.	Refer to Fig.11.	VR-501	Adjust VR501 slowly (250 B) until 23.5mVs are indicated. Leave unit on for one minute or so, repeat Steps 1 and 2.	23.5 mV ± 4.7mV	Connect load resistance of 8 Ω to speaker terminals.
3	Confirma-tion of mid-point voltage	V.T.V.M. or tester	No. 9 and No. 11 (ground) terminals of main circuit board.	VR509	25 ± 2V. When standard value is not indicated, adjust R509 (150Ω) to obtain correct value.	25 V ± 2V	Refer to Figs. 11and 12.
4	Max. output, Distortion, Gain.		LF sig. gen. (Freq. 1 kHz; Distortion factor: less than 1%). Level meter with dB calibration.		Increase output of LF sig. gen. to 24.3dBm. Insure distortion meter indicates less than 1% distortion. Confirm amplifier in-put signal level remains at 0dBm. (±2dBm).	Max. out-put, 24.3 dBm. Distortion factor, less than 1%. Input signal level, 0 ± 2dBm.	
5	Frequency response character-istics.	Same as Step 4 above.	Refer to Fig.10.		Increase LF sig. gen. output. Adjust amp. in-put signal level so that output level is 1W, at 1kHz. Maintaining in-put level, change freq., by 20 – 40kHz. Insure output remains within limits of standard value.	Output, 1W +0, –3dB at 20 – 40 kHz.	

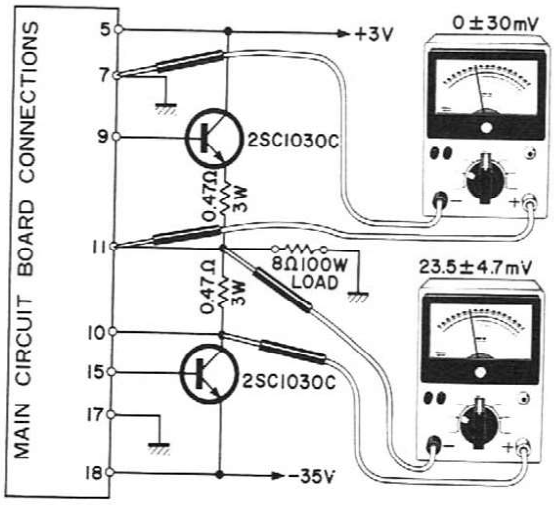


Fig. 9

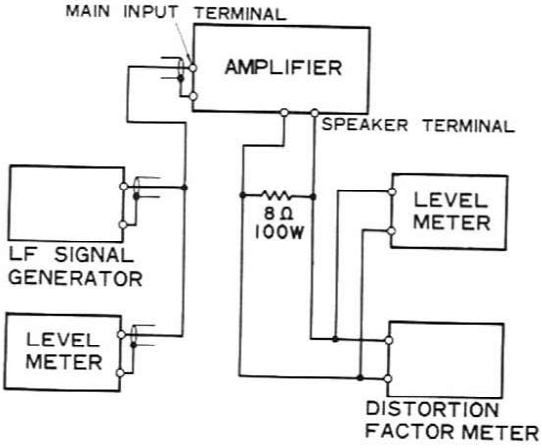


Fig. 10