

ASTOR

ASTOR ELECTRONICS PTY. LTD.

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G9J - 1

File: Receivers AC.

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ASTOR MODEL "G9J" STEREOGRAM — RADIO

11 TRANSISTOR BROADCAST BAND RECEIVER
AND A FOUR-SPEED STEREO RECORD CHANGER
FOR OPERATION FROM 240 VOLT 50 CYCLE SUPPLY MAINS



Tuning Range:
Intermediate Frequency:
Power Output:
Supply Source:
Power Consumption:

525 - 1610 Kilocycles
455 Kilocycles
1 Watt. each channel
240 Volt. 50 cycle
Radio - 5 watts
Gramo-26 watts.

ACCESS TO INTERIOR

Remove screws fastening motor board to cabinet then lift board upward.

CHASSIS SERIAL NUMBER

When the motor board is lifted upward the serial number may be seen stamped into the chassis adjacent to the output transistors.

CAUTION:

Disconnect receiver power lead plug from mains socket before making adjustments inside the cabinet.

ALIGNMENT EQUIPMENT

Signal Generator - Modulated 400 cps
Output Meter - 15 ohm impedance
Generator Series Capacitor - .1uF Part No. 4006-005-03
Alignment Tools

- (a) Flat metal Blade End - Part No. 4121-001-01 for I. F. T. and Osc. coil iron core Adjustment
(b) Chisel Point type - Part No. 4121-005-01 for trimmer capacitor adjustment

ALIGNMENT CONDITIONS

Volume Control - Maximum (fully clockwise)
Tone Control - Maximum treble (fully clockwise)
Function Switch - "Radio" position
Output Level - 50 milliwatts
Output Meter
Connection - To speaker lead of one channel (speaker disconnected)
Supply Voltage - 240 volt 50 cycle

INTERMEDIATE FREQUENCY TRANSFORMER ALIGNMENT

Remove screws fastening motor board to cabinet then lift board upward.
The receiver chassis does not have to be removed from the motor board for alignment purposes.
Fully mesh tuning gang plates and loosen tuning indicator locking screw. Set indicator to low frequency end of travel dial spot then tighten lock screw.

Set tuning control to high frequency end of travel.
Insert .1 uF capacitor in series with generator "hot" lead.

Oper. No.	Generator Connection	Generator Frequency	Instructions
1.	To pin on circuit board (term. 4 of slab aerial)	455 Kc/s	Adjust iron core of 3rd IF trans. for max. output.
2.	As oper. 1.	455 Kc/s	Adjust iron core of 2nd IF trans. for max. output
3.	As oper. 1.	455 Kc/s	Adjust iron core of 1st IF trans. for max. output.
4.	Repeat operations 1, 2 and 3.		

BROADCAST ALIGNMENT

- A. To inject a signal into the receiver connect 2 ft. of aerial wire to the "hot" terminal of signal generator. Fashion wire into a vertical position.
- B. Place receiver so that ferrite aerial is uppermost and horizontal.
Tuning end of receiver is to be toward but not less than one foot from generator aerial wire.

PICK-UP STYLUS PRESSURE

The stylus pressure is to be between 5 and 7 grammes. A pressure gauge Part No. 4121-013-01 is available from Spare Parts Division.

To check the pressure, ensure the unit is level and that no record is on the turntable.

Place the stylus pressure gauge on the turntable then lower pick-up arm so that stylus locates in the hollow provided on gauge.

Move the slide weight to obtain a balance then read the pressure indicated. Should the pressure be outside the tolerance, adjust the arm as follows:

Lift the pick-up arm and note knurled adjusting nut on the spring tension rod.

Increase spring tension to reduce stylus pressure. Decrease spring tension to increase stylus pressure.

CLEANING OF CABINET

Do not polish cabinet, plastic or metal sections with an abrasive material, motor car polish, boot polish or similar household cleaning fluids, as permanent damage may result to the finish of the components.

To restore the finish of the cabinet, etc., wipe with a soft cloth, dampened with water and lightly polish with a neutral wax.

TRANSPORTING THE RECEIVER

Before moving the player, press the pick-up arm down into lock clip on the rest pillar.

If the unit is to be transported a distance, the transit screws must be screwed fully anti-clockwise until the unit locks down firmly on to the cabinet.

Remove rubber grommet from mains lead entry hole. With lead inside cabinet insert plug into plug retainer then refit grommet to cabinet hole.

RECORD CHANGER REPLACEMENT

The Garrard "Autoslim" record changer fitted to this receiver has been modified by the fitting of a bracket to the pick-up arm pivot assembly.

The function of this bracket is to limit the upward travel of the pick-up arm.

If the changer unit is being replaced it is important that this bracket be removed and fitted to the new unit.

Failure to do this could result in damage to the pick-up arm when the cabinet is opened.

The part No: of the bracket is 7228-027-03.

MECHANICAL COMPONENT PARTS

Part Number

7031-125-01	Bush (1) tuning spindle
7198-801-02	Grub screw (2) 3/16" x 1/8" Whit. - tuning spindle bush
7031-017-01	Bush (3) tuning gang mount
7106-032-01	Grommet (3) tuning gang mount
7196-067-14	Screw (3) 5/16" x 4BA C/sk. hd. - tuning gang mount
7070-029-11	Disc (1) tuning
7261-352-01	Washer (2) Neoprene - tuning disc
7196-927-02	Screw (1) tuning disc
7124-048-03	Knob (3)
7225-035-01	Spring (3) knobs
7008-253-01	Metcal (1) dial and knob designations
7018-015-01	Surround (1) dial metcal
7169-148-01	Clip (4) metcal surround
7065-162-01	Plate (1) 3 pin plug retainer
7185-017-01	Plug retainer (1) moulded - 3 pin plug
7201-576-15	Screw (3) 3/8" x No. 4 pan. hd. Phillips recessed - retainer plate
7120-576-06	Grommet (1) mains leads
7054-051-01	Clamp (1) mains lead
7166-001-01	Mount pillar (2) rod aerial
7279-005-02	Nut plate (2) mount pillar
7225-078-01	Clip (2) rod aerial
7198-951-11	Screw (2) 3/8" x 1/8" Whit. rd. hd. sems. - nut plate
7111-007-01	Heat sink (4) output transistors
7261-133-01	Washer (4) 9/64" x 9/16", steel - heat sink
7204-576-15	Screw (12) 1/4" x No. 4 Phillips hd. - circuit boards
7261-138-12	Washer (12) 9/64" x 5/16" steel - circuit boards
7167-058-01	Pin (9) circuit boards
7120-026-01	Glass bead (20) transistors and diode mount
7198-961-11	Screw (4) 1/4" x 1/8" Whit. pan. hd. - driver trans.
7148-302-11	Nut (4) 1/8" Whit. hex. - driver trans.
7152-751-01	Speed nut (2) No. 4 - power trans.
7204-576-12	Screw (2) 3/8" x No. 4 Phillips hd. - power trans.
7231-202-01	Terminal strip assy. (1) 4 lug - type 2E1
7231-112-01	Terminal strip assy. (1) 6 lug - type 1E3E
7231-102-01	Terminal strip assy. (1) 3 lug - type 1E1
7032-002-01	Button (1) light indicator
7054-058-01	Clamp (1) neon lamp
7060-022-02	Contact (4) speaker leads
7171-015-01	Plug (1) external aerial and earth leads
7228-027-03	Clip (1) pick-up arm
7106-077-01	Cover (1) mains lead aperture
7201-627-20	Screw (4) 7/8" x No. 6 C/sk hd. - motor board
7265-004-02	Washer (4) cup - motor board
7197-136-02	Rail (4) baffle, retaining
7201-577-26	Screw (4) 1/2" x No. 6 Ph. Hd. - top rail
7201-627-21	Screw (4) 5/8 x No. 6 csk. hd. - bottom rail
7265-007-01	Washer (4) formed - bottom rail
7089-004-05	Foot (4) cabinet base
7201-577-04	Screw (4) 3/8" x No. 6 Phillips pan. hd. - cab. feet
7008-238-03	Badge (1) ASTOR
7310-010-01	Nut (2) self threader - badge
7209-298-14	Screw (3) 5/8" x 8-32 Phillips pan. hd. - chassis to Motor board.

STYLING

Cabinet Assy.	Colour
7038-012-01	Charcoal Gold - Light Grey
7038-012-02	Moocha Gold - Ivory
7038-012-03	Grey Silver - Charcoal

COMPONENTS INCLUDED IN CABINET ASSY.

NPN	Cabinet (1)
NPN	Drawer (1)
NPN	Motor board (1)
NPN	Baffle (2) speakers
7028-453-03	Bracket (1) catch plate
7201-576-15	Screw (2) 3/8" x No. 4 Phillips pan. hd. - catch plate
7049-011-01	Catch (1) includes mounting screws
7109-046-02	Handle (1) includes mounting rivets
7199-154-01	Screw (2) drawer pivot
7086-295-01	Eyelet (2) barrel dia. 295" - pivot
7086-350-01	Eyelet (2) barrel dia. 350" - pivot
7149-858-01	Nut (2) dot tee - pivot
7027-428-01	Bracket (2) stop
7198-177-53	Screw (4) 1/2" x 5/32" Whit. rd. hd. - stop bracket
7261-163-14	Washer (4) 11/64" x 3/8" - stop bracket
7185-017-02	Stop retainer (2) moulded
7198-176-70	Screw (2) 5/8" x 1/8" Whit. rd. hd. - stop retainer
7261-138-24	Washer (2) .140 x .3125" - stop retainer
7152-669-01	Nut (2) 1/8" Whit. hex. - stop retainer
1033-001-18	Speaker baffle covering

Oper. No.	Generator Connection	Generator Frequency	Instructions
1.	Refer PARA. A. & B.	600 Kc/s	Set tuning indicator to 600 Kc/s spot on dial. Screw in aerial trimmer to max. capacity then unscrew a half turn. Adjust iron core of oscillator coil for maximum output whilst rocking tuning gang thru signal
2.	As oper. 1.	1400 Kc/s	Set tuning indicator to 1400 Kc/s spot on dial. Adjust oscillator and aerial trimmer capacitors for max. output. Do not rock gang.
3.	As oper. 1.	600 Kc/s	Tune receiver to generator. Adjust iron core of osc. coil for max. output whilst rocking gang thru signal.
4.	Repeat operations 2 & 3.		
5.	Tuning range 525 to 1610 Kc/s approx.		

TUNING INDICATOR DISC SETTING

Loosen disc locking screw, anticlockwise. Rotate the disc for optimum logging of the local stations then securely tighten lock screw.

AUDIO AMPLIFIER GAIN AND BALANCE TEST

Function Switch	-	Gramo position
Volume Control	-	Maximum (fully clockwise)
Tone Control	-	Maximum treble (fully clockwise)
Output Meter and Speaker Connections	-	To speaker lead of one channel (speaker disconnected). Connect a speaker to other channel.
AF. Generator Frequency	-	1000 cps. - 600 ohms impedance.
AF. Generator Connection	-	Before proceeding note lead connections then disconnect amplifier input leads from pick-up sockets.

Connect audio generator to the input leads of one amplifier.

Set output of audio generator to 100 millivolts.

With equipment connected as above the output meter should read a minimum of 50 milliwatts.

With input signal set at 100 millivolts, exchange output meter and speaker connections to opposite channels.

Connect audio generator to other channel input.

Difference in output between the two readings must not exceed 2 db.

SPEAKER PHASING

It is essential that the speakers be phased correctly.

If a speaker has to be removed for service, note the lead connections to ensure correct phasing when reconnecting.

A method used for checking the phasing of the speakers is detailed in the following paragraphs.

1. Play a monophonic record.
2. To conduct the following test the listener should be located at a position four feet away in front of the centre of the cabinet.
3. If the phasing is correct the reproduced sound will appear to be radiated from a point near the centre of cabinet front.
4. With incorrect phasing the quality of reproduction will be poor, it will appear to be lacking in bass response and will appear to be radiated from both ends of the cabinet.
5. If the speakers are incorrectly phased, reverse the leads connected to the voice coil terminals of one speaker then repeat the test detailed above.

R. F. TUNER, RECORD CHANGER AND POWER SUPPLY

Circuit No.	Value	Capacitors Description	TOL + $\%$ -	Rating DCW	Part Number
1		Tuning, two gang			4000-028-05
2	5-30 pF	Trimmer, compression			4000-023-01
3	.01 uF	Disc Ceramic		25V	4008-039-06
4	500 uF	Electrolytic		16V	4005-014-13
5	.01 uF	Disc ceramic		25V	4008-039-06
6	3-30 pF	Trimmer, wire wound			4000-025-01
7	22Q pF	Polystyrene	5	125V	4004-005-03
8	.01 uF	Disc ceramic		25V	4008-039-06
9	10 uF	Electrolytic		6V	4005-007-12
10					
11	.01 uF	Disc ceramic		25V	4008-039-06
12	8.2 pF	Disc ceramic, NPO	.5pF	500V	4008-012-01
13	.01 uF	Disc ceramic		25V	4008-039-06
14	.01 uF	Disc ceramic		25V	4008-039-06
15	220 pF	Polystyrene	5	125V	4004-005-03
16	.01 uF	Disc ceramic		25V	4008-039-06
17	.22 uF	Polyester	10	160V	4009-007-01
18	2000 uF	Electrolytic		25V	4005-016-05
19	.01 uF	Disc ceramic		25V	4008-039-06
20					
21	27 pF	Disc ceramic, NPO	5	500V	4008-031-04
22	220 pF	Polystyrene	5	125V	4004-005-03
23	.01 uF	Disc ceramic		25V	4008-039-06
24	100 pF	Polystyrene	10	125V	4004-008-06
25	100 pF	Polystyrene	10	125V	4004-008-06
26	100 pF	Polystyrene	10	125V	4004-008-06
27	.0047 uF	Disc ceramic		25V	4008-037-03
28	2000 uF	Electrolytic		25V	4005-016-05
29					
30					

Circuit No.	Value Ohms	Resistors Description	TOL + %	Rating Watts	Part Number
31	2.2K	Carbon	10	1/2	4022-021-02
32	56K	Carbon	10	1/2	4022-003-03
33	2.2K	Carbon	10	1/2	4022-021-02
34	8.2K	Carbon	10	1/2	4022-027-02
35	2.2K	Carbon	10	1/2	4022-021-02
36	1.8K	Carbon	10	1/2	4022-030-01
37	560	Carbon	10	1/2	4022-010-01
38	100K	Carbon	10	1/2	4022-013-02
39	3.3K	Carbon	10	1/2	4022-006-01
40	4.7	Wire Wound	10	1/2	4024-012-03
41	2.2K	Carbon	10	1/2	4022-021-02
42	22K	Carbon	10	1/2	4022-026-02
43	560	Carbon	10	1/2	4022-010-01
44	4.7K	Carbon	10	1/2	4022-005-01
45	82K	Carbon	10	1/2	4022-037-01
46	47K	Carbon	10	1/2	4022-051-03
47	470K	Carbon	10	1/2	4022-045-03
48	47K	Carbon	10	1/2	4022-051-03
49					

69	Record changer - 4 speed, 200-250V, 50 cycle, GARRARD "AUTOSLIM"	
Refer also to paragraph "Record Changer Replacement"	pick-up arm fitted with Ronette stereo - 105 crystal cartridge with sapphire needles	4085-063-01
	40 cycle motor assembly includes stepped drive bush	4085-159-01
	Replacement crystal cartridge Ronette stereo - 105 includes sapphire needles	4085-032-01
	Replacement needle, standard, Ronette sapphire SA-250-ST	4085-033-01
	Replacement needle, microgroove Ronette sapphire SA-075-ST	4085-034-01
	Replacement record spindle assy.	7224-202-01
70	Junction block (4) mains distribution	7020-009-01
71	Switch - Radio/Gramo	4059-130-01
72	Terminal (4) Pick-up lead terminations	7244-034-01
73	Contact pin (4) pick-up lead "	7240-002-01
74	Socket (1) external aerial and earth	7222-033-01

AMPLIFIER UNITS
(CIRCUIT NUMBERS ARE IDENTICAL FOR BOTH AMPLIFIERS)

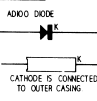
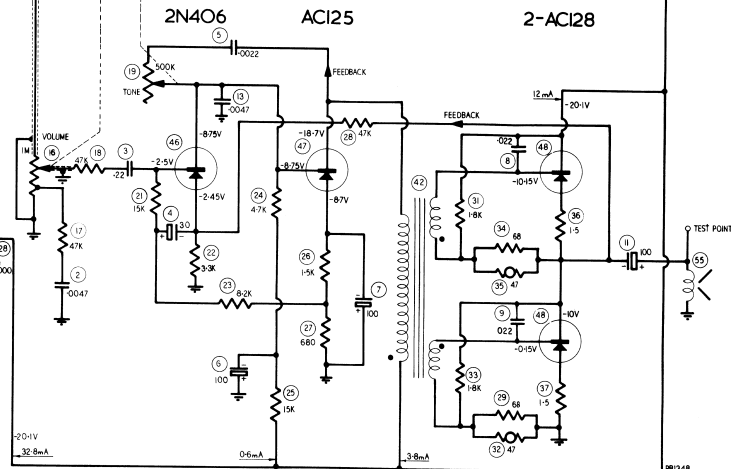
Circuit No.	Value	Capacitors Description	TOL + %	Rating DCW	Part Number
1					
2	.0047 uF	Disc ceramic		25V	4008-037-03
3	.22 uF	Disc ceramic		25V	4008-053-01
4	30 uF	Electrolytic		6V	4005-033-01
5	.0022 uF	Tubular ceramic	5	500V	4008-049-04
6	100 uF	Electrolytic		12V	4005-002-31
7	100 uF	Electrolytic		12V	4005-002-31
8	.022 uF	Disc ceramic		25V	4008-010-03
9	.022 uF	Disc ceramic		25V	4008-010-03
10					
11	100 uF	Electrolytic		12V	4005-002-31
12					
13	.0047 uF	Disc ceramic		25V	4008-037-03

No.	Ohms	Resistors Description			
16	1M	Volume controls, ganged, tapped at 400K ohm			4034-004-01
17	47K	Carbon	10	1/2	4022-051-03
18	47K	Carbon	10	1/2	4022-051-03
19	500K	Tone controls, ganged, DP. ST. switch attached			4034-003-02
20					
21	15K	Carbon	10	1/2	4022-001-02
22	3.3K	Carbon	5	1/2	4022-006-11
23	8.2K	Carbon	10	1/2	4022-027-02
24	4.7K	Carbon	10	1/2	4022-005-01
25	15K	Carbon	10	1/2	4022-001-02
26	1.5K	Carbon	5	1/2	4022-007-07
27	680	Carbon	5	1/2	4022-028-05
28	47K	Carbon	10	1/2	4022-051-03
29	68	Carbon	5	1/2	4022-024-05
30					
31	1.8K	Carbon	5	1/2	4022-030-07
32	47	Disc. thermistor, NTC	10	1-1/4	4021-040-01
33	1.8K	Carbon	5	1/2	4022-030-07
34	68	Carbon	5	1/2	4022-024-05
35	47	Disc. thermistor, NTC	10	1-1/4	4021-040-01
36	1.5	Wire wound	5	1/2	4024-020-03
37	1.5	Wire wound	5	1/2	4024-020-03
38					
39					
40					

Circuit No.	Miscellaneous	Part Number
42	Driver transformer	4042-072-01
46	Transistor - audio amp - type 2N406	4128-009-02
47	Transistor - audio driver - type AC125	4128-039-01
48	Transistors - audio output - type 2-AC128, matched pair	4128-035-01
55	Speaker - 5" x 3" - type 53D03/266/15	4056-016-02

Circuit No.	Miscellaneous	Part Number
50	Lamp - neon, includes resistor	4068-009-02
51	Loading coil	4036-051-01
52	Ferrite rod aerial	4074-011-01
53	Oscillator coil	4043-019-01
54	I. F. transformer No. 1 455 Kc/s Red - Green	4044-009-04
55	I. F. transformer No. 2 455 Kc/s Red - Grey	4044-009-07
56	Power transformer	4041-037-01
57	I. F. transformer No. 3 455 Kc/s Red - Violet	4044-009-06
58	Transistor - mixer/oscillator-type 2N412	4128-011-02
59	Diode - overload-type IN295	4127-001-01
60	Transistor - I. F. amp. No. 1-type 2N410-E Green spot	4128-010-03
61	Transistor - I. F. amp No. 2-type 2N410-B Red spot	4128-010-04
62	Diode - rectifier - type AD100	4127-042-01
63	Diode - rectifier - type AD100	4127-042-01
64	Diode - A.G.C. - type 1N295	4127-001-01
65	Diode - detector - type 1N295	4127-001-01
66	Mains lead and plug assy.	4077-120-04
67	Switch, part of tone control	
68	Switch, part of record changer	

2-ACI28



1.F. 455 Kc/s

DWN.	CHD.	APP.	DA
K.G.	25	23	41