

PHILIPS CAR RADIO Model N3G82VT

General Description: Four-valve plus output transistor, two-waveband, "hybrid"-type car radio with 12-volt "H.T." line.

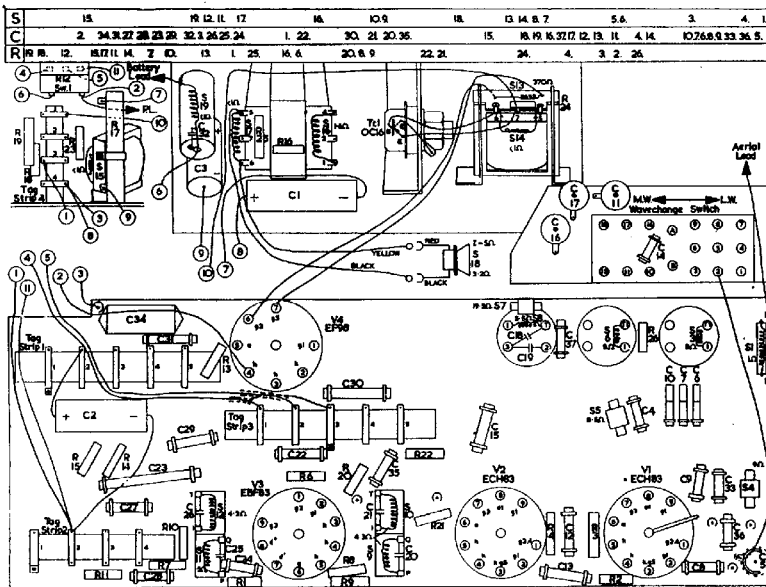
Power Supply: 12-volt car battery. Consumption about 1.3 amp. Normally supplied for use with positive-earth systems, but can be modified for negative-earth systems.

Wavebands: M.W. 185-580 m.; L.W. 1049-2000 m.

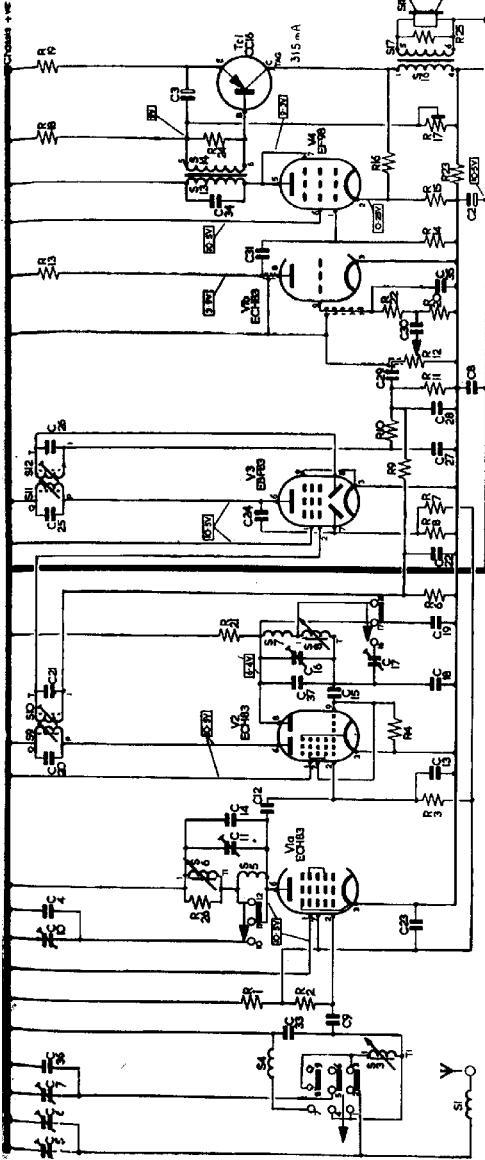
Valves: (V₁) ECH83; (V₂) ECH83; (V₃) EBF83; (V₄) EF98.

Transistor: (Tr1) OC16. From Serial No. 120,000 a Type OC19 is used with a modified circuit. Do not operate with loudspeaker disconnected.

Alignment Procedure: *I.F.*: Note two types of transformer are fitted, those marked MK56652 should be peaked to 470 kc/s., while Type MK56951 should be peaked to 480 kc/s. *I.F.T.s* are trimmed through holes in pilot-lamp mounting plate. Knobs, spindle bushes, scale, coloured plate, trim plate, scale back-plate and pilot lamp must first be removed. Disconnect loudspeaker and connect output meter in parallel with 5-ohm load resistor across loudspeaker leads. Switch to M.W., turn tuner unit to maximum



UNDER CHASSIS LAY-OUT



Volts taken with respect to C2 -ve using a 200000V voltmeter
127-wr input. POSITIVE side of battery to CHASSIS.

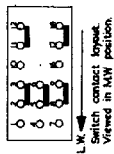
CIRCUIT DIAGRAM—PHILIPS CAR RADIO MODEL N3C82VT

Capacitors.

- C1 500 (±5 v.)
- C2 100 (±2 v.)
- C3 2000 (0 v.)
- C4 200 pF.
- C5 60 pF.
- C6 50 pF.
- C7 400 pF.
- C8 4700 pF. or 0.1
- C9 100 pF.
- C10 400 pF.
- C11 3-30 pF.
- C12 3-30 pF.
- C13 15 pF. (10%)
- C14 22 pF.
- C15 100 pF.
- C16 3-30 pF.
- C17 3-30 pF.
- C18 195 pF.
- C19 56 pF.
- C20 4700 pF.
- C21 4700 pF.
- C22 4700 pF.
- C23 33 pF.
- C24 103 pF.
- C25 103 pF.
- C26 103 pF.
- C27 100 pF.
- C28 82 pF.
- C29 4700 pF.
- C30 4700 pF.
- C31 4700 pF.
- C32 4700 pF.
- C33 102 pF. (2%)
- C34 0.01
- C35 47 pF.
- C36 56 pF.
- C37 56 pF. (10%)
- C38 0.1 (10%)
- C39 0.47 (10%)

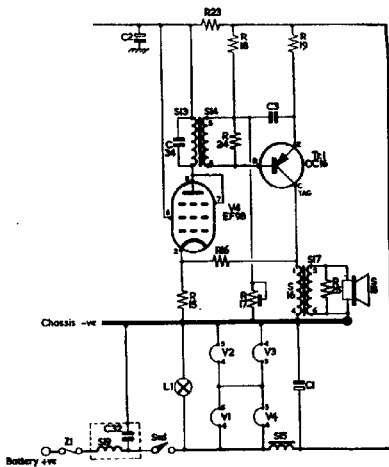
Resistors.

- R1 10M
- R2 1M
- R3 1M
- R4 47K
- R5 1M
- R6 1M
- R7 1M
- R8 1M
- R9 3.9M
- R10 47K
- R11 0.39M
- R12 2M (log)
- R13 10M
- R14 10M
- R15 47 (10%)
- R16 2.2k (10%)
- R17 75 (W.W.)
- R18 6.6 (W.W., 5%)
- R19 20 (W.W., 5%)
- R20 10M
- R21 18k (10%)
- R22 47K
- R23 100
- R24 22
- R25 56 (10%; 1 W.)
- R26 10M
- R27 0.33M



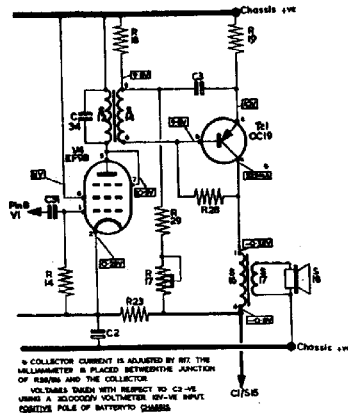
Battery -w- 0

In some sets only: R27 across C5/C6; C38 across L1; C39 between battery side of L.T. switch and chassis; heater positions of V1, V2 reversed.



RECEIVER SUPPLY CIRCUIT CONNECTED FOR
NEGATIVE EARTH SYSTEMS

(C34 should be connected between anode of
V₅ and chassis.)



MODIFIED OUTPUT STAGE (FROM SERIAL
No. 120,001)

Using OC19 Transistor R28 470Ω
($\frac{1}{2}$ W., 10%); R29 10Ω (1 W., 10%)
(R15, R16, R24, R25 deleted).

anti-clockwise position. Inject I.F. signal to grid of V₂ (pin 2) via a 0.047-μF. capacitor, and trim S₁₂, S₁₁, S₁₀ and S₉.

M.W.: Set C₅ to mid-travel. Adjust tuner unit so that pointer lines up with trimming mark on right-hand side of scale. Apply a 508-kc/s. signal to grid of V₂ and trim C₁₆. Inject a 1620-kc/s. and tune to signal. Transfer generator to aerial socket and trim C₁₁ and C₆.

L.W.: Adjust tuner unit as above. Inject a 146-kc/s. signal to grid of V₂ and trim C₁₇. Inject 210-kc/s. signal and tune to signal. Transfer generator to aerial socket and trim C₁₀ and C₇.

C₅: Where possible this should be adjusted after completion of installation, but in some cases this must be done during installation. Peak for maximum sensitivity with receiver tuned to weak station about 500 m. To gain access to trimmer, knobs, spindle bushes, scale, coloured plate and trim plate must be removed. Special trimming tool supplied with Installation Kit should be used.

Collector Current: This is adjusted by R₁₇ while the supply voltage is exactly 12 volts. Connect milliammeter in series with S₁₆ (between H.T. negative and tag 4 of S₁₆/S₁₇). Switch on and allow several minutes for TR₁ to reach thermal equilibrium. Adjust R₁₇ for current of 315 mA. (OC16) or 325 mA. (OC19).

Notes: To provide greater servicing accessibility, chassis is made in two sections: that containing output and filter components can be separated from remainder by removing six fixing screws. Near section can then be

folded back on to main unit and held in position by two fixing screws. To replace pilot lamp remove control knobs, spindle bushes, scale, coloured plate, trim plate and scale backplate. Fuse Z1 3 amp. Festoon lamp, 12 volts, 3 watts. From Serial No. 125,001 C18, C19 changed to 220 pF. (5 per cent.) and fitted externally to S8 with C37 deleted.

PHILIPS

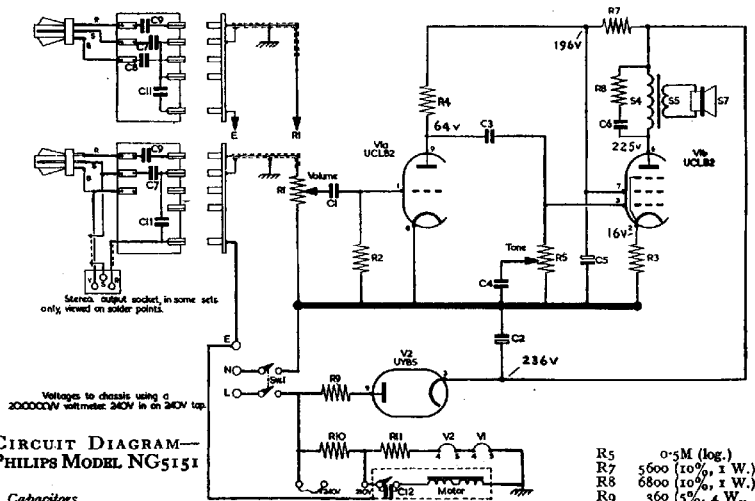
Model NG5151

General Description: Two-valve (including rectifier), record reproducer with two-stage amplifier and four-speed auto-changer record unit (Philips Type AG1014).

Power Supply: A.C. mains, 200-250 volts, 50 c/s. Consumption about 50 watts. Note that chassis may be "live". Access to the mains adjustment is obtained by removing the amplifier casing panel.

Valves: (V1) UCL82; (V2) UY85.

Notes: Twin styli, Type AG3016. Some models are fitted with three-pin socket for modification for stereo (detailed in instruction leaflet PG.015.240). *To remove record changer:* Remove ornamental screws at each corner of record changer, tilt unit to enable pick-up connection strip to be unplugged and unsolder motor connections. *To remove amplifier:* Remove record changer. Remove amplifier casing panel followed by control knobs, two 4-mm. chassis fixing nuts and 4-mm. mains dropper bracket fixing nut. Unsolder speaker leads and remove amplifier.



CIRCUIT DIAGRAM—
PHILIPS MODEL NG5151

- Capacitors.**
 C1 4,700 pF.
 C2 50 (275 v.)
 C3 18,000 pF.
 C4 5,600 pF. (10%)
 C5 50 (275 v.)
 C6 5,600 pF. (1300 v.)
 C7 4,700 pF.

- C8 4,700 pF. (omitted with stereo socket)
 C9 4,700 pF.
 C11 4,700 pF.

- Resistors.**
 R1 0.5M (log.)
 R2 10M
 R3 390 (10%, 1 W.)
 R4 0.22M

- R5 0.5M (log.)
 R7 5600 (10%, 1 W.)
 R8 6800 (10%, 1 W.)
 R9 360 (5%, 4 W., W.W.)
 R10 180 (5%, 5 W., W.W.)
 R11 1230 (5%, 15 W., W.W.)
 R12 22 (10%)
 R13 1500 (10%)

Voltagcs to chassis using a 20000ΩVW with 240V in on 240V tap.

Stereo input socket, in some sets only, viewed on solder points.

PHILIPS CAR RADIO Model N4G93VT

General Description: Four-valve (plus output transistor), two-wave-band, "hybrid"-type car radio with 12-volt "H.T." line, with push-button station selection and wave-change and with continuously variable tone control. Also known as Model 493VT.

Power Supply: 12-volt car battery. Shown for positive-earth systems on circuit diagram but with instructions for modifying for negative-earth systems. Consumption approximately 1.5 amps.

Wavebands: M.W. 192-580 m.; L.W. 1050-2000 m.

Valves: (V₁) ECH83; (V₂) ECH83; (V₃) EBF83; (V₄) EF98. Transistor (Tr1) OC26.

Notes: Fuse FS1 3 amp.; pilot lamp, L1, 12 volts, 3-watts (Type 12842). Typical voltages shown on circuit diagram, taken with respect to the negative size of C₃₁ using a 20,000-ohms/volt meter. Receiver switched to M.W. under no-signal conditions with input of 12 volts, 1.5 amps. The arrows on the potentiometers indicate movement of wiper when knob is turned in a clockwise direction. S₂, S₃ and S₄ are ganged together, Sw1 is ganged to R12.

PHILIPS Model NG5055

General Description: Three-valve (including rectifier), portable stereo record player with detachable 6½-in. loudspeakers.

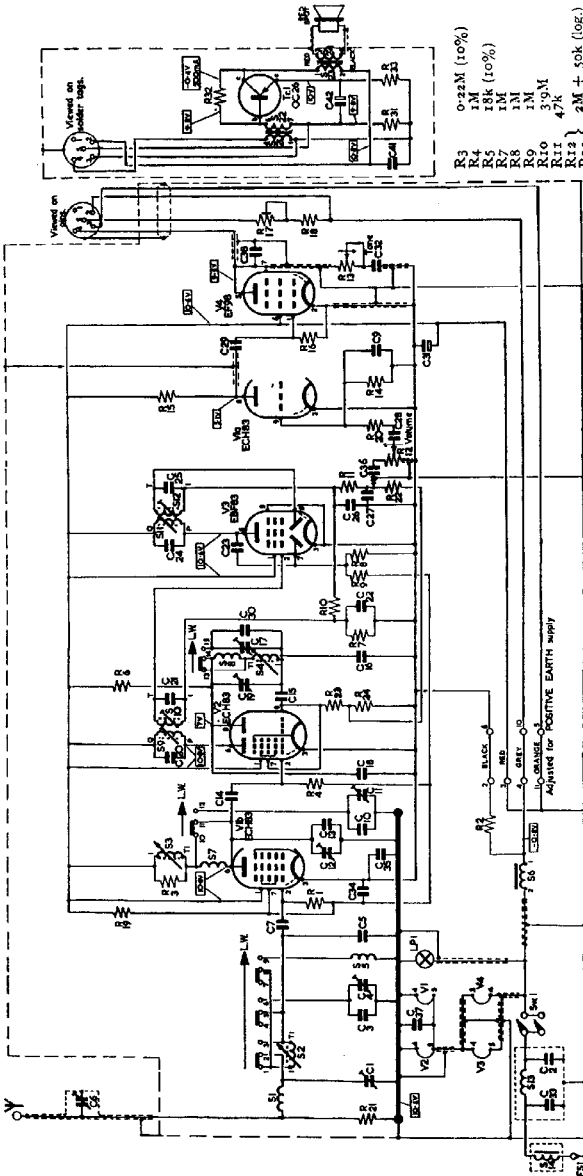
Power Supply: A.C. mains, 200-250 volts, 50 c/s. Consumption about 50 watts.

Valves: (V₁) ECL83 (R. H. Channel); (V₂) ECL83 (L. H. Channel); (V₃) EZ80.

Pick-up Heads: Early models had AG3063 (Stereo) and AG3066 (Mono) heads. Later production fitted the dual turn-over head Type AG3301.

Playing Weight: This should be between 4-7 grams. Using either an AG3063 or AG3066 head the indicator plate at back of pick-up arm should be opposite centre red spot. With AG3301 indicator should be between centre and top red dots. Coarse adjustment plate under pick-up arm should be set for maximum spring tension.

Notes: To remove complete turntable assembly, first place speed selector in position "O" and then remove centre circlip. Motor spindle, which is stepped for speed selection, is machined after assembly and should not be removed unless absolutely necessary. To remove idler wheel, first remove turntable. Switch to 78 r.p.m. and remove retaining circlip and wheel, note that plastic washer is fitted above and below the wheel.



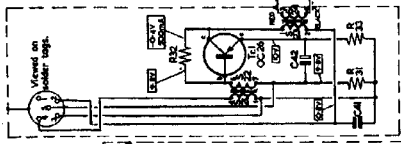
For NEGATIVE EARTH:
 Remove the BLACK lead from lug 2 and connect to lug 3
 Remove the RED lead from lug 3 and connect to lug 5
 Remove the GREY lead from lug 5 and connect to lug 4
 Remove the ORANGE lead from lug 5 and connect to lug 6
 Adjust for POSITIVE EARTH supply

CIRCUIT DIAGRAM—PHILIPS MODEL N4C93VT

- Capacitors.**
 C1 50 pF.
 C2 0.47
 C3 275 pF.
 C4 0.22
 C5 0.22 pF. (1%)
 C6 100 pF.
 C7 100 pF.
 C8 4700 pF.
 C9 47 pF.
 C10 150 pF. (10%)
 C11 480 pF.
 C12 30 pF.
 C13 27 pF.
 C14 22 pF. (10%)
 C15 100 pF.
 C16 47 pF. (5%)
 C17 30 pF.
 C18 220 pF. (5%)
 C19 30 pF.

- C20 150 pF.
 C21 150 pF.
 C22 4700 pF.
 C23 33 pF.
 C24 150 pF.
 C25 150 pF.
 C26 100 pF.
 C27 100 pF.
 C28 4700 pF.
 C29 4700 pF.
 C30 100 pF. (10%)
 C31 100 pF. (10%)
 C32 0.22
- C33 0.47
 C35 0.47
 C36 4700 pF.
 C37 0.1
 C38 1000 (15 v.)
 C41 2000 (6 v.)
 C42 2000 (6 v.)
- Resistors.**
 R1 1M
 R2 100

- R3 0.22M (10%)
 R4 1K (10%)
 R5 15K
 R6 1M
 R7 1M
 R8 1M
 R9 1M
 R10 3.9M
 R11 47K
 R12 2M + 50k (log.)
 R13 10M
 R14 0.15M
 R15 10M
 R16 10M
 R17 100 (W.W.)
 R18 56 (5.5 W., W.W.)
 R19 10M
 R20 47K
 R21 0.33M (10%)
 R22 15K
 R23 33k
 R24 6.2 (5% W.W.)
 R31 470 (10%, I.W.)
 R32 470 (10%, I.W.)
 R33 1 (10%, I.W.)



PHILIPS CAR RADIO Model N3G82VT

General Description: Four-valve plus output transistor, two-waveband, "hybrid"-type car radio with 12-volt "H.T." line.

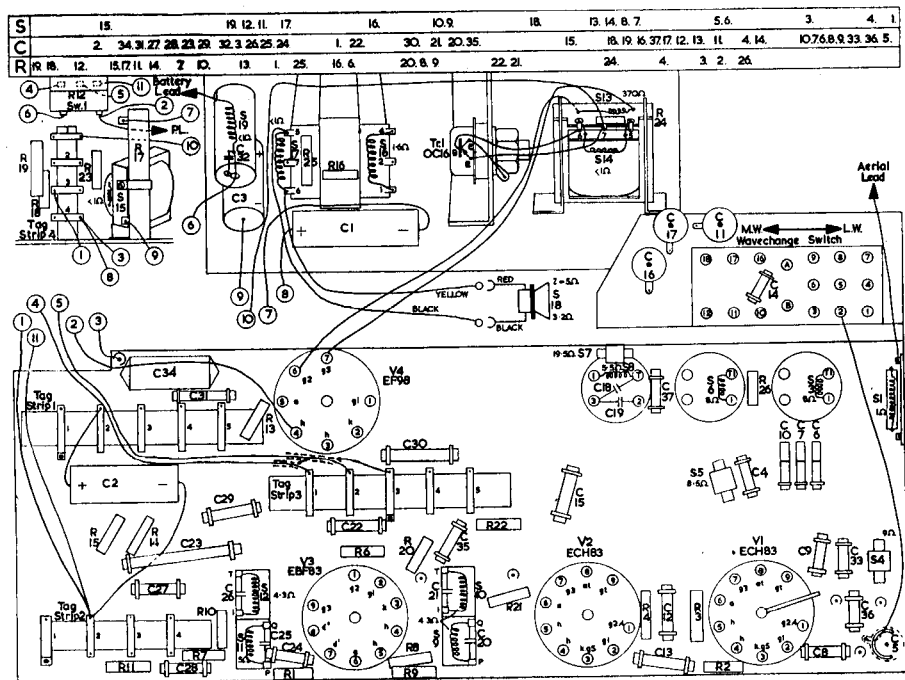
Power Supply: 12-volt car battery. Consumption about 1.3 amp. Normally supplied for use with positive-earth systems, but can be modified for negative-earth systems.

Wavebands: M.W. 185-580 m.; L.W. 1049-2000 m.

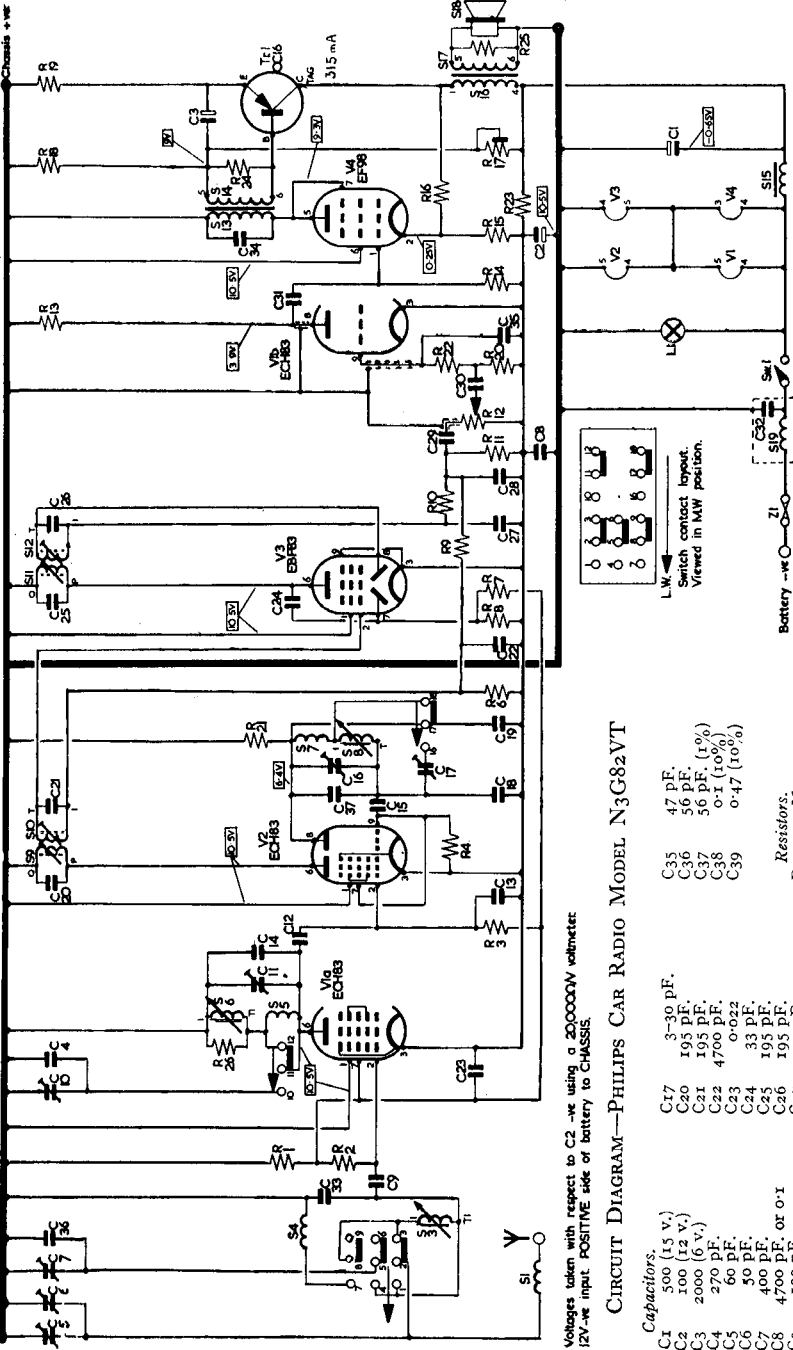
Valves: (V₁) ECH83; (V₂) ECH83; (V₃) EBF83; (V₄) EF98.

Transistor: (Tr1) OC16. From Serial No. 120,001 a Type OC19 is used with a modified circuit. Do not operate with loudspeaker disconnected.

Alignment Procedure: I.F.: Note two types of transformer are fitted, those marked MK56652 should be peaked to 470 kc/s., while Type MK56951 should be peaked to 480 kc/s. I.F.T.s are trimmed through holes in pilot-lamp mounting plate. Knobs, spindle bushes, scale, coloured plate, trim plate, scale back-plate and pilot lamp must first be removed. Disconnect loudspeaker and connect output meter in parallel with 5-ohm load resistor across loudspeaker leads. Switch to M.W., turn tuner unit to maximum



UNDER CHASSIS LAY-OUT



Voltages taken with respect to C2 -ve using a 200000V voltmeter.
12V -ve input POSITIVE side of battery to CHASSIS.

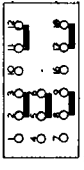
CIRCUIT DIAGRAM—PHILIPS CAR RADIO MODEL N3G82VT

Capacitors.

- C1 500 (1.5 v.)
- C2 100 (12 v.)
- C3 2000 (6 v.)
- C4 270 pF.
- C5 60 pF.
- C6 50 pF.
- C7 400 pF.
- C8 4700 pF. or 0.1
- C9 100 pF.
- C10 400 pF.
- C11 3-30 pF.
- C12 22 pF. (10%)
- C13 15 pF. (10%)
- C14 27 pF.
- C15 100 pF.
- C16 3-30 pF.
- C17 3-30 pF.
- C18 195 pF.
- C19 195 pF.
- C20 195 pF.
- C21 195 pF.
- C22 4700 pF.
- C23 0.022
- C24 33 pF.
- C25 195 pF.
- C26 195 pF.
- C27 100 pF.
- C28 82 pF.
- C29 4700 pF.
- C30 4700 pF.
- C31 4700 pF.
- C32 0.22
- C33 102 pF. (2%)
- C34 0.01
- C35 47 pF.
- C36 56 pF.
- C37 56 pF. (1%)
- C38 0.1 (10%)
- C39 0.47 (10%)

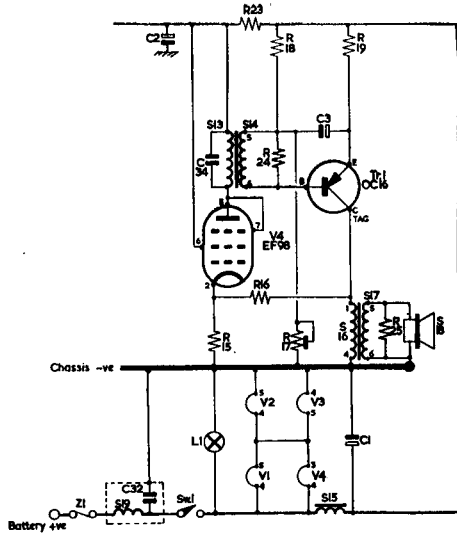
Resistors.

- R1 10M
- R2 1M
- R3 1M
- R4 47k
- R5 1M
- R6 1M
- R7 1M
- R8 1M
- R9 3.9M
- R10 47k
- R11 0.39M
- R12 2M (log)
- R13 0.18M
- R14 10M
- R15 47 (10%)
- R16 2.2k (10%)
- R17 75 (W.W., 5%)
- R18 6.8 (W.W., 5%)
- R19 3 (W.W., 5%)
- R20 10M
- R21 18k (10%)
- R22 47k
- R23 100
- R24 22
- R25 56 (10%, 1 W.)
- R26 0.12M
- R27 0.33M

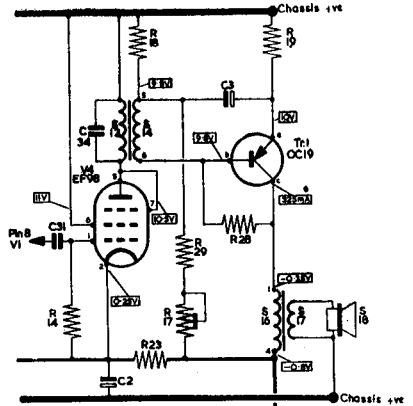


L.W. ←
Switch contact layout.
Viewed in MW position.

In some sets only: R27 across C5/C6; C39 between battery side of L.T. switch and chassis; heater positions of V1, V2 reversed.



RECEIVER SUPPLY CIRCUIT CONNECTED FOR NEGATIVE EARTH SYSTEMS (C34 should be connected between anode of V5 and chassis.)



COLLECTOR CURRENT IS ADJUSTED BY R17. THE MILLIAMMETER IS PLACED BETWEEN THE JUNCTION OF R28/R36 AND THE COLLECTOR. VOLTAGES TAKEN WITH RESPECT TO C2-VE. USING A 20,000V VOLTMETER (2V-VE INPUT; POSITIVE POLE OF BATTERY TO CHASSIS)

MODIFIED OUTPUT STAGE (FROM SERIAL No. 120,001)

Using OC19 Transistor R28 470Ω (½ W., 10%); R29 10Ω (1 W., 10%) (R15, R16, R24, R25 deleted).

anti-clockwise position. Inject I.F. signal to grid of V2 (pin 2) via a 0.047-μF. capacitor, and trim S12, S11, S10 and S9.

M.W.: Set C5 to mid-travel. Adjust tuner unit so that pointer lines up with trimming mark on right-hand side of scale. Apply a 508-kc/s. signal to grid of V2 and trim C16. Inject a 1620-kc/s. and tune to signal. Transfer generator to aerial socket and trim C11 and C6.

L.W.: Adjust tuner unit as above. Inject a 146-kc/s. signal to grid of V2 and trim C17. Inject 210-kc/s. signal and tune to signal. Transfer generator to aerial socket and trim C10 and C7.

C5: Where possible this should be adjusted after completion of installation, but in some cases this must be done during installation. Peak for maximum sensitivity with receiver tuned to weak station about 500 m. To gain access to trimmer, knobs, spindle bushes, scale, coloured plate and trim plate must be removed. Special trimming tool supplied with Installation Kit should be used.

Collector Current: This is adjusted by R17 while the supply voltage is exactly 12 volts. Connect milliammeter in series with S16 (between H.T. negative and tag 4 of S16/S17). Switch on and allow several minutes for Tr1 to reach thermal equilibrium. Adjust R17 for current of 315 mA. (OC16) or 325 mA. (OC19).

Notes: To provide greater servicing accessibility, chassis is made in two sections: that containing output and filter components can be separated from remainder by removing six fixing screws. Near section can then be

folded back on to main unit and held in position by two fixing screws. To replace pilot lamp remove control knobs, spindle bushes, scale, coloured plate, trim plate and scale backplate. Fuse Z₁ 3 amp. Festoon lamp, 12 volts, 3 watts. From Serial No. 125,001 C₁₈, C₁₉ changed to 220 pF. (5 per cent.) and fitted externally to S8 with C₃₇ deleted.
