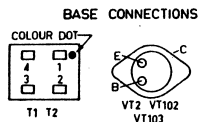
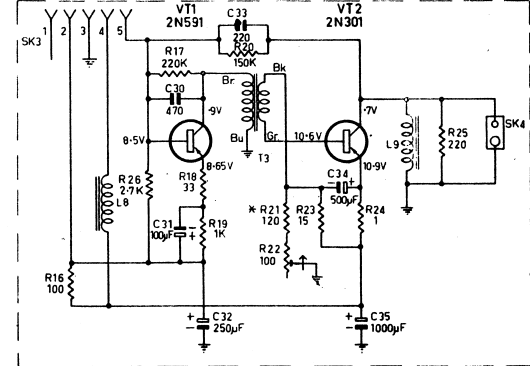
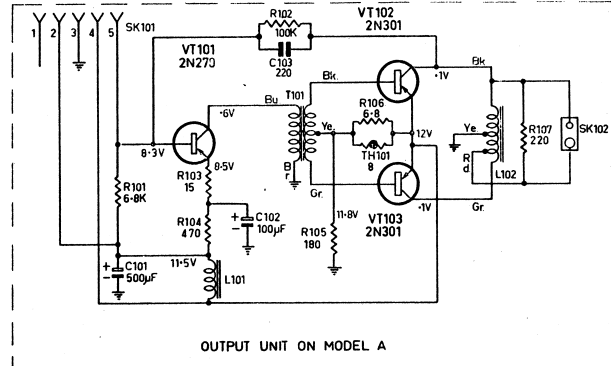
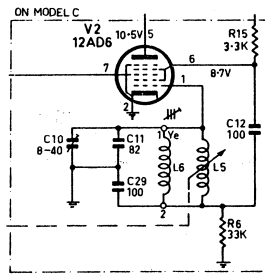
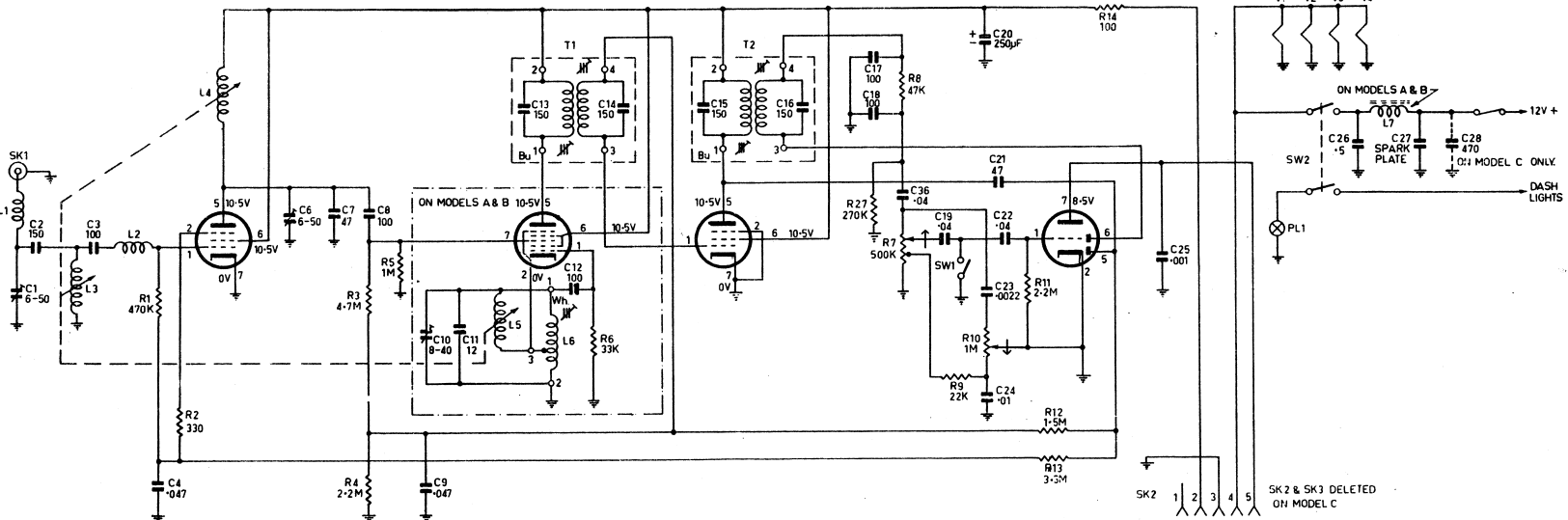


V1  
12BL6

V2  
12AD6

V3  
12BL6

V4  
12FK6



VIEWED FROM WIRING SIDE

FORD CAR RADIOS MODELS

NOTE - ARROWS ON POTENTIOMETERS INDICATE DIRECTION OF CLOCKWISE ROTATION  
ALL VOLTAGES ARE MEASURED WITH NO SIGNAL INPUT BY A 20,000 OHM/VOLT METER.

ARCODF - 18805-A (MODEL A)  
ARCODF - 18805-B (MODEL B)  
ARCODF - 18805-C (MODEL C)

A.W.A.  
964A, 965A, 966A.

A66

**General:**

Whilst transistors, when used within the manufacturer's ratings, should give considerably longer life in service than vacuum tubes, the following precautions should be observed when servicing.

Transistors can be damaged when checking circuit continuity by the D.C. voltage present in an ohmmeter. To avoid damaging a transistor or getting a misleading resistance reading, the base and emitter leads to the transistor should be disconnected. However, an ohmmeter may be used with care to test a power transistor as described later.

The use of screwdrivers as a means of checking high tension is not only a waste of time but can permanently damage the transistors. Similarly the indiscriminate shorting to ground of the valve grids and particularly the output transistor base as a means of checking whether certain stages are operating will almost certainly have drastic results.

Get in the habit of using a good quality voltmeter and a signal tracer or generator with a series capacitor for all fault finding.

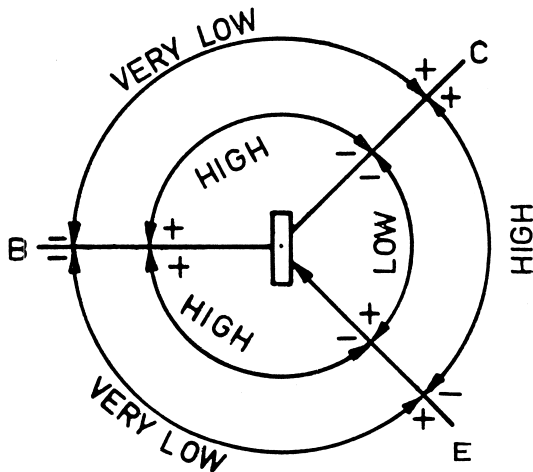
In general the transistors should be the last component to be suspected in a faulty receiver. However, if a receiver is faulty due to an open circuit speaker voice coil, then the power transistor should be checked for possible damage.

**Power Transistor Test:**

Power transistors can be readily checked for short or open circuit by carefully applying an ohmmeter check to determine the forward and reverse resistance of each junction as a diode.

An ohmmeter, either multimeter or vacuum tube type, having a small battery voltage of say 1.5 volts applied on the XI range must be used. Check this with a voltmeter before using, as a higher voltage will cause damage. Also check the polarity of the meter leads in the ohmmeter position. Often this is the reverse of the polarity when used as a voltmeter or ammeter.

Fig. 2 shows the correct resistance readings between the junctions of the 2N301 power transistor with the + and - signs indicating the correct polarity of the applied ohmmeter leads. The base and emitter leads should be disconnected from a mounted transistor.



RESISTANCE DIAGRAM  
FIG 2

**Bias Adjustment for 965A, 966A:**

Values for 966A in brackets thus [ ].  
A variable control (R22) is provided to enable adjustment of the base — emitter bias voltage. This is set at the factory and should not need resetting unless a replacement transistor has been fitted. To set the bias, proceed as follows:

- (a) Connect a voltmeter capable of accurately measuring 0.5 volts [0.4 volts] across the emitter resistance choke (R24).
- (b) Adjust the battery input voltage to exactly 12.0 volts with the receiver operating. Adjust the bias control until the voltmeter reads exactly 0.5 volts [0.4 volts].  
or
- (a) Connect an ammeter capable of accurately measuring 500 mA [400 mA] in the supply lead to the Output choke (L9).
- (b) Adjust the battery input voltage to exactly 12.0 volts with the receiver operating.
- (c) Adjust the bias control until the ammeter reads exactly 500 mA [400 mA].  
In either case this will set the transistor collector current at 500 mA [400 mA].

**Bias on Model 964A**

No adjustment of transistor bias is provided. Total collector current should be between 0.2 and 0.4 amps with 12 V supply and no signal input, rising to 0.8 amps at full output.

**Transistor Mounting (Models 965A and 966A)**

The transistor is thermally connected to, but electrically insulated from a heat sink mounted across the rear of the receiver.

If a transistor is removed from the heat sink or replaced for any reason, it is essential that the following method of mounting be carefully adopted.

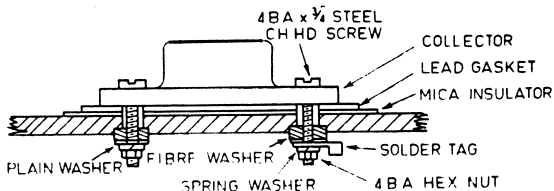


FIG 3

On no account must the old lead gasket and mica insulator be used again.

To mount the transistor, first liberally smear the relevant surfaces of the heat sink and the transistor, and both sides of the lead gasket and mica insulator with silicone grease. (MS4 silicone compound available in handy 8oz. tubes.)

Fit the fibre washers into the counter bored holes, place the mica insulator in position on the finned side followed by the lead gasket and finally the transistor.

Assemble the screws, plain washers, spring washers, solder tag and nuts as shown in fig. 3 and tighten the nuts progressively one at a time until the set is taken out of the spring washers.

**Warning.** Excessive tightening of these screws can distort the transistor base with the danger of rupture to the mica insulator.

Finally check with an ohmmeter the insulation between the collector (mounting flange) of the transistor and the heat sink (greater than 1 megohm).

Model 964A: Transistor mounting on Model 964 is the same as above except that self lapping screws are used to mount the transistor to a bakelite socket thus dispensing with the 4BA steel screws, nuts, spring washers and fibre washers.