

# Subsequent Installation and Testing of Car Radio

(Optional, SA 55152 and SA 55160)

In addition to the radios made by the two firms of

Becker and Telefunken

which have been approved for installation at works, the Sindelfingen works has approved the radios made by the two firms of

Blaupunkt and Philips

for subsequent installation at branches and agencies.

All the suppliers of car radios issue installation instructions with the sets and also a digest of the list of parts. The car radios should be fitted according to the installation instructions. The latest modifications are incorporated in the instructions in each case. For this reason, no detailed data on the subject have been included in this Workshop Manual.

The same applies to the installation of aerials. Those made by the firms of Sihm and Hirschmann have been approved. Drilling templates are supplied together with the installation instructions. The templates make the work of installation considerably easier.

When a car radio is installed, the whole ignition system must be fitted with suppressors. Methods of interference suppression are indicated in the installation instructions and these enable complete suppression to be obtained for VHF reception. The most important parts of the suppression system are:

- Suppressed spark plugs — resistance of . . . . . 5000 Ohms
- Suppressed distributor rotor arm — resistance of . . . . . 5000 Ohms
- Suppressed plug contacts for the ignition cables at the distributor and at the spark plugs — each resistance of . . . . . 5000 Ohms
- Suppressed plug contacts for the high tension cable from the ignition coil to the distributor at the distributor end — resistance of . . . . . 5000 Ohms

**Note:** With such an all-embracing system of interference suppression, a particularly unfavourable combination of factors might lead to misfiring under full-load conditions and at high engine speeds, since the suppressor resistors reduce the actual spark considerably. In such cases it is advisable to remove the suppressed plug contacts at the distributor and if necessary, also the suppressed plug contact of the high tension cable from the ignition coil to the distributor. It will then be necessary to put up with some slight ignition interference in VHF and short-wave reception; the interference level is, however, tolerable if the radio station is tuned to the exact carrier frequency.

**If the installation of the radio is carried out strictly according to the installation instructions, there is as a rule no possibility of interference or of malfunction.**

In this connection it should be noted that only those suppressed spark plugs approved by us may be used and that the specified electrode gap of 0.9—1.0 mm must be maintained (see also Job No. 01—3, Section C).



| Cause  | Remedies  |
|--|---|
| <p>6. Short-circuit in aerial.</p> <p>7. Wave-change switch defective.</p> <p>8. Automatic tuning defective.</p> | <p>6. Connect another aerial temporarily to the set. If the reception is now good, replace the aerial.</p> <p><b>Note:</b> Penetrating damp or bodywork shampoo can cause short-circuiting in a car aerial and this affects the reception of the set. It is not possible, however, to measure the resistance of an aerial circuit with a D. C. Ohmmeter. The simplest way of checking the efficiency of the aerial, therefore, is to compare its performance with that of another car-aerial, known to be in good order.</p> <p>7. Check the reception in all wave ranges. If reception is nil or unsatisfactory on one or more wave ranges, remove the set from the vehicle.</p> <p>8. Check the automatic tuning of the set in all wave ranges, setting the sensitivity switch to the position "empfindlich" ("sensitive").<br/>If no stations can be received or if too few are received or if all stations are off tune, remove the set from the vehicle.</p> |

#### Electrical Interference Noises with Engine Running

| Cause   | Remedies   |
|---|--|
| <p>When the starter is being operated, the car radio should always be switched off in order to avoid any possible damage to the vibrator, due to supply-voltage drops. All wave ranges should be checked with the engine running and interference in one or more of the ranges noted.</p>   |  |
| <p>1. Ignition interference:<br/>Characterized by audible chattering which varies with the engine speed. If the ignition is switched off for a moment, the interference disappears.</p> <p>2. Regulator cut-out switch interference:<br/>This takes the form of irregular crackling noises which can also be heard with the ignition switched off.</p> <p>3. Generator interference:<br/>This kind of interference takes the form of so-called collector-singing and is also audible when the ignition is switched off.</p> | <p>1. Check the interference suppressors of the ignition system according to the instructions on interference suppression.<br/>At the same time check the distributor contacts to see if they are oiled-up or dirty.</p> <p>2. Check the interference suppression of the regulator cut-out switch, if necessary, ground the regulator cut-out switch housing with a ground tape.</p> <p>3. Check the generator interference suppression and install an electrically conducting fan belt.</p> |

| Cause   | Remedies  |
|---|---|
| <p><b>Note:</b> The interference symptoms mentioned in 2 and 3 can best be checked with the ignition switched off and the vehicle moving. Slight interference, due to static charges, can be caused by the fan belt of the generator.</p>   |   |
| <p><b>Interference Noises at High Speeds</b></p>  |   |
| Cause   | Remedies  |
| <p>Static charges:<br/>These take the form of crackling noises which disappear when the foot brake is operated.</p>   | <p>Check the wheel-hub suppressors or if these are not fitted, fit them to the front wheels.</p>  |
| <p><b>Atmospheric or other Interference Noises</b></p>  |   |
| Cause   | Remedies  |
| <p>1a) Atmospheric interference:<br/>This is due to electrical storm disturbances in the atmosphere and is particularly strong in the long wave range.</p> <p>1b) Interference from a high tension supply or from electrical apparatus, such as street cars or electric motors:<br/>Interference of this kind is particularly strong in the medium and long wave ranges.</p> <p>1c) Interference from other vehicles, not fitted with interference suppression:<br/>Such interference is particularly strong in VHF reception.</p> <p>2. Interference caused by faulty contacts in the set or in the vehicle.</p> | <p>1a)—1c):<br/>In order to ascertain whether the interference is coming from an external source, pull the aerial plug out of the set. If the interference disappears, the cause must be atmospheric interference or interference from some other external source. There is no remedy for this.</p> <p>2. Check in the same way by pulling out the aerial plug.<br/>If in spite of this the interference is still audible, the fault must lie in the leads and in the ground connections.<br/>The set must therefore be removed from the vehicle.</p> |
| <p><b>Note:</b> Any defects in the car radio which cannot be detected and put right with the methods and tests described above, must be repaired by a radio specialist. The radio should be removed from the vehicle and sent for repair to the agency of the firm producing the set.</p>   |   |