This unit is a radio-cassette player (or audio unit) with a remote control (satellite) located on the right hand side of the steering wheel, which has the same functions as the main controls on the audio set.

It is also used for entering the confidential code (see below).

There are two types of satellites.

Depending on the vehicle, the radio will be fitted with one or the other.

Sound is distributed in the vehicle by speakers which are located for optimum sound quality.

For security reasons, each set is coded.
Each time + before ignition feed is cut, a code must be entered (four figures) which is supplied by the manufacturer to allow the system to operate.

IMPORTANT: when preparing a new vehicle, the scrambled mode operation must be cancelled (see page 86-3). Before any operation on the vehicle, check that the customer has the confidential radio code.

OPERATIONAL SPECIFICATIONS

- A high performance radio tuner, with PLL frequency synthesiser and microprocessors, allowing processing and storing of many types of information, in particular, in Travelstore, automatic selection of the best stations broadcasting your FM programmes:
  - five wave bands L (GO) - M (PO) - U (FM) - UT (Travelstore on FM),
  - UT (Travelstore) : automatic storing of the six best received stations on FM,
  - six preselections per wave band,
  - manual electronic search for stations in increasing or decreasing frequencies,
  - automatic electronic search for stations only in increasing frequency using the satellite remote control,
  - automatic mono / stereo switching,
  - two levels of stop sensitivity for electronic searching may be selected from the front panel.

- A cassette reader:
  - "Hard Permalloy" reading head,
  - radio may be heard during fast winding.

- Low frequency amplifiers, each delivering a power of 6 Watts as per standard DIN 45 324 3.1 :
  - electronic volume adjustment,
  - left - right speaker balance,
  - continuous bass - treble adjustment.

PREPARATION OF RADIOS ON NEW VEHICLES

For security reasons, when the set leaves the factory, it will operate in the following way.

When the set is turned on, beeps will be heard every **3 seconds** over the radio or cassette sound, for **2 minutes.**

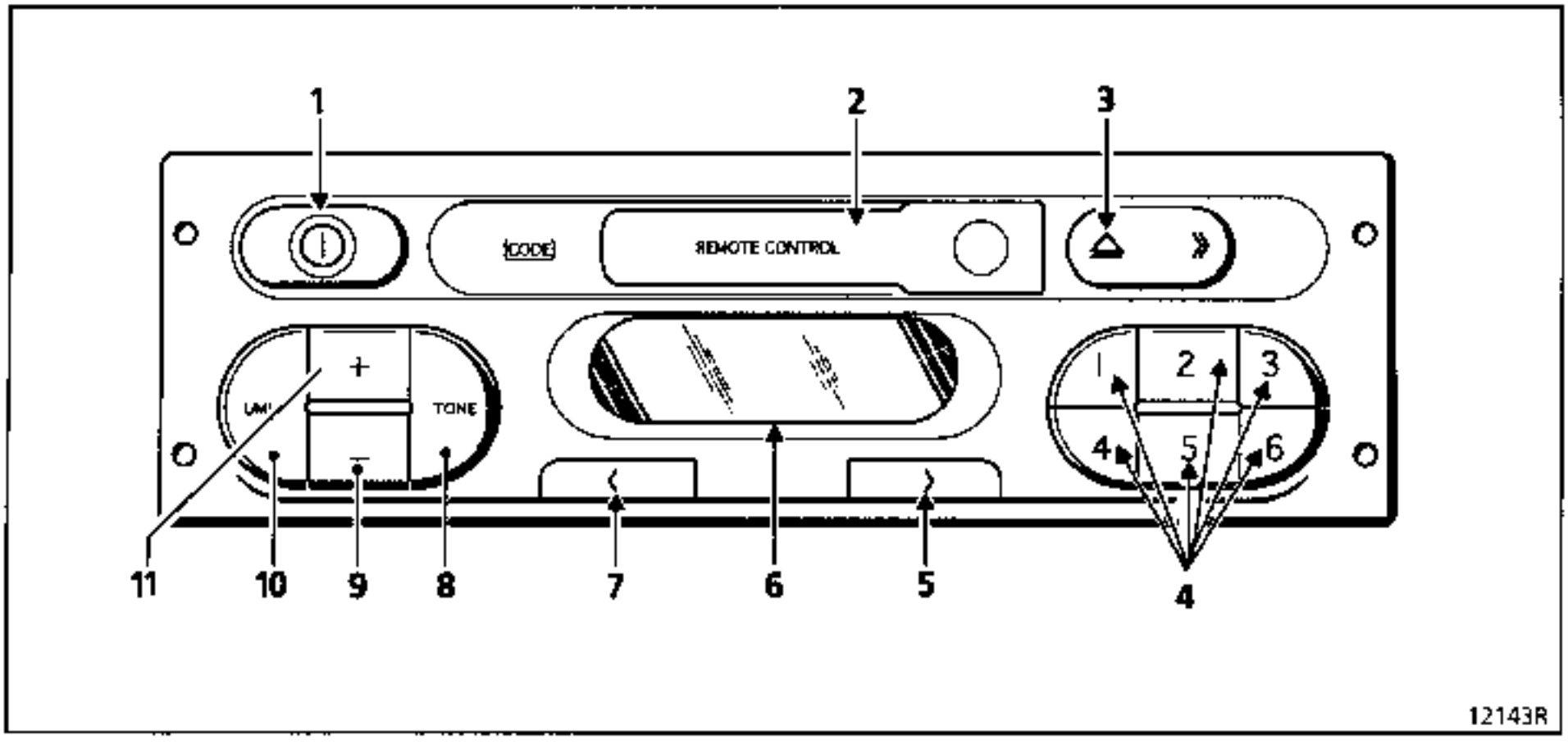
While the frequency or cassette message is displayed all functions will be operational.

After **2 minutes,** the set will be silent and the display will permanently show **"CODE"** .

This mode of operation is called **"scrambled mode".**

To cancel the scrambled mode, enter the code when the set displays **"CODE"** (see page 86-8).

AUDIO UNIT



1 Radio, cassette and satellite On/Off button.

2 Cassette compartment.

3 Cassette eject or fast forward button.

4 Buttons for:

- Recall of radio station preselections (1 to 6) - brief pressure (less than 2 seconds).
- Memorising radio stations by continued pressure (longer than 2 seconds).

5 Manual search button in increasing frequency.

6 Display.
For more details, see page 86-6.

7 Manual search button in decreasing frequency.

8 Selection button for bass / treble and left / right balance adjustment.

9 "-" button for:

- reducing volume,
- adjusting left / right balance to the right,
- reducing bass and treble levels.

10 Button for :

- Selecting the wave band **M (PO), U (FM), UT (Automatic programming** in FM or **Travelstore)** or **L (GO)** by brief, successive presses.

- Adjusting the stop sensitivity level for automatic searching by pressing the button until a beep is heard.

  DX extinguished: Normal search stop sensitivity.
  The electronic search will only stop on stations received with a sufficient clarity to allow comfortable listening.

  DX illuminated: Increased search stop sensitivity.
  The electronic search will stop at all stations received, even if clarity is not optimal.

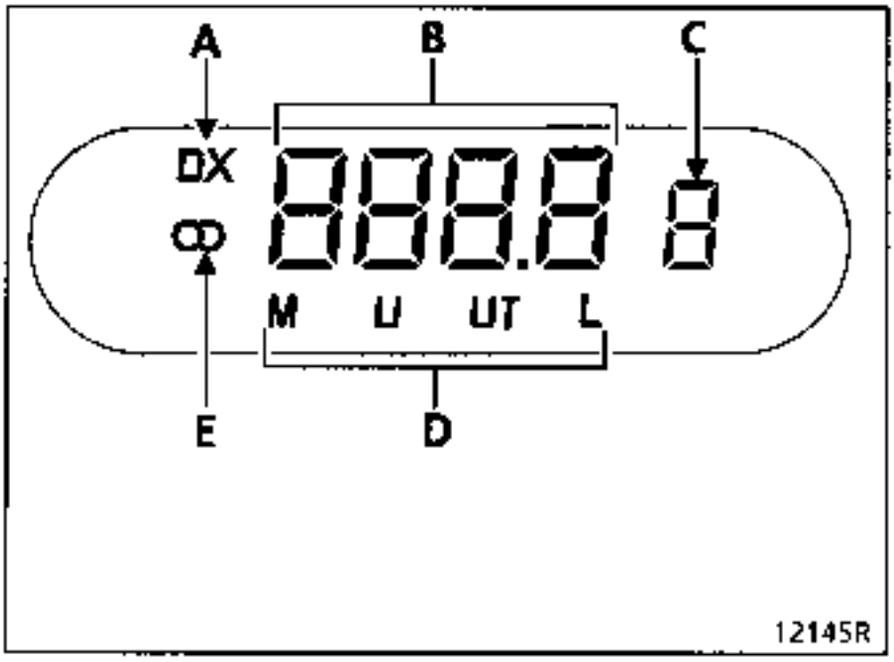
11 " + " button for:

- increasing volume,

- adjusting left / right balance to the left,

- increasing bass and treble levels.

DISPLAY



A Increased search stop sensitivity indicator for automatic searching.

B Frequency to which the radio is tuned, or "CASS" indicating that the cassette reader is in operation.

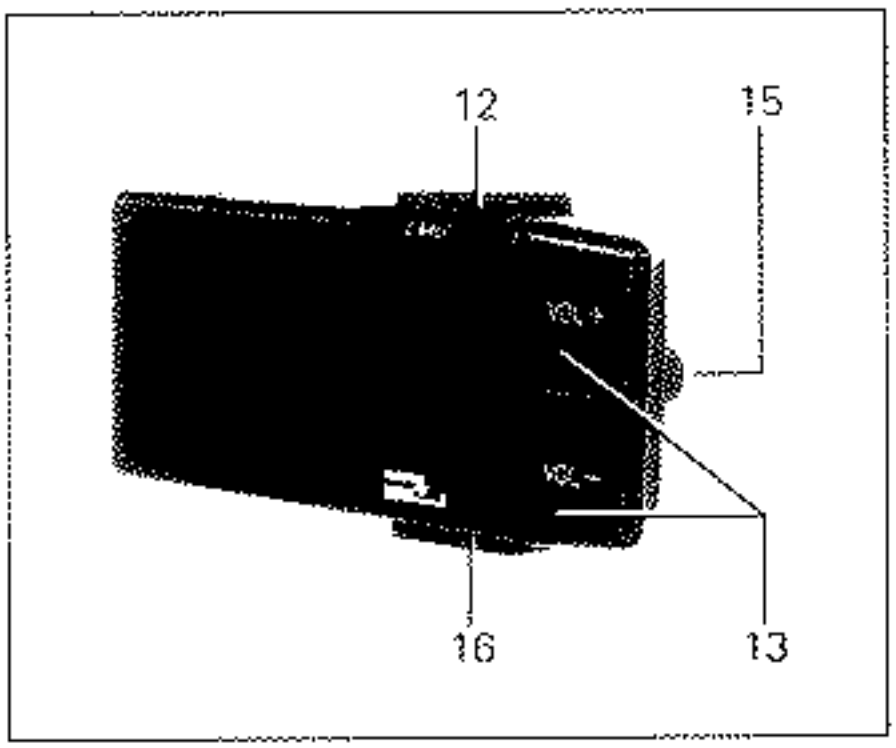
C Active preselection (1 to 6).

D Wave band indicators M (PO), U (FM), UT (Automatic programming in FM or Travelstore) and L (GO).

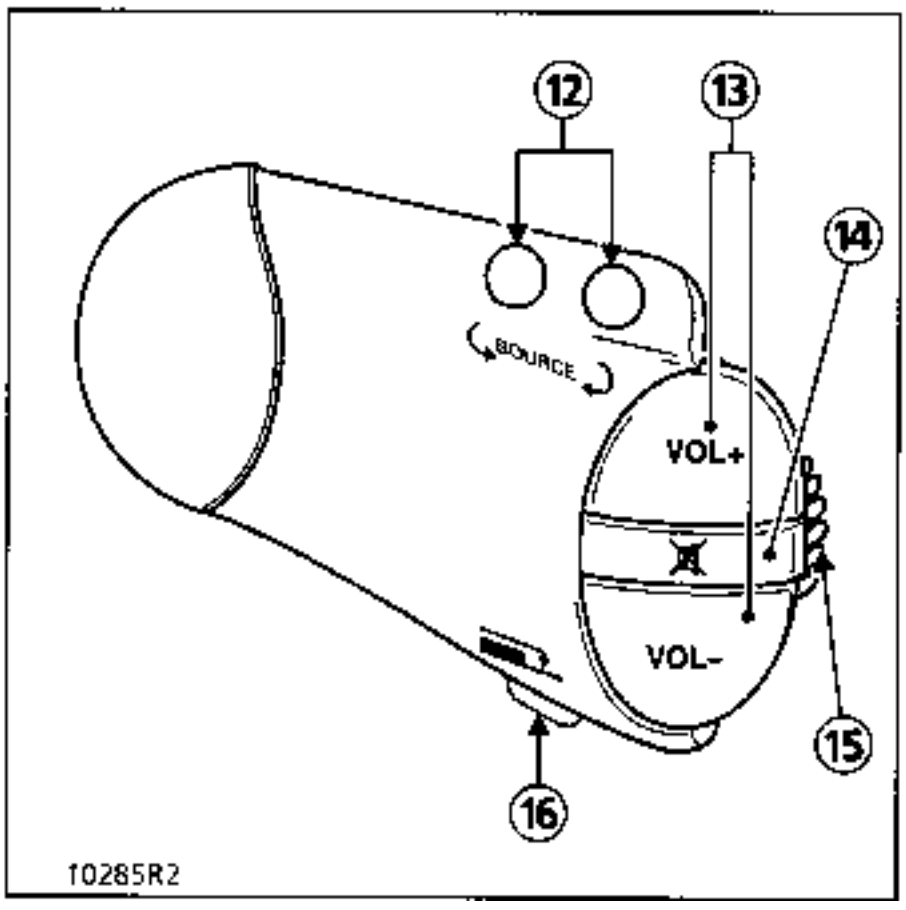
E Stereo indicator for FM.
In FM, when reception conditions are difficult, various filters are used to cancel the stereo effect; the indicator will extinguish.

SATELLITE (remote control unit)

Type 1 :



Type 2 :



12 Change wavelength or source each time the button is pressed according to the following sequence:
FM (U), FM Travelstore (UT), PO (M), GO (L), cassette, FM (U)... (or inverse sequence depending on the button **12** used on a satellite of "**type 2**").

13
- " + /-" buttons to adjust the volume.
- Cut / restore sound ("**Mute**" function) by pulling the two buttons at the same time.

14 **On a type 2 satellite only:**
Cut / restore sound ("**Mute**" function).

15 Tumblewheel:
- Radio mode: change the preselection (**1 to 6**) in the wave band selected by button **12**.
- Mode for entering confidential code: entering four code figures.

16
- Short press (less than **2 seconds**) :
  - Automatic search for a station in increasing frequency (in radio mode).
  - Validation of code figures (in mode for entering confidential code).
- Long press (longer than **2 seconds**) :
  - Start of **Automatic programming in FM** or **Travelstore** (in radio mode or cassette mode).
  - Validation of code (in mode for entering confidential code).

The code is a four figure number between **0000** and **9999**.

It is shown on the detachable part of the **PV des Mines** stuck on the warranty booklet or, for export, on the vehicle invoice.

Programmed in the unit at the time of manufacture, this code may not be modified by the user.

PROCEDURE FOR ENTERING THE CODE

- **After cutting + before ignition feed.**
- **To cancel scrambled mode operation**

a) Press button 1 to turn the set on, the message **"CODE"** is shown briefly on the display (at the end of **2 minutes** operation in scrambled mode) before being replaced by **"0000"**, where the first **"0"** is flashing.

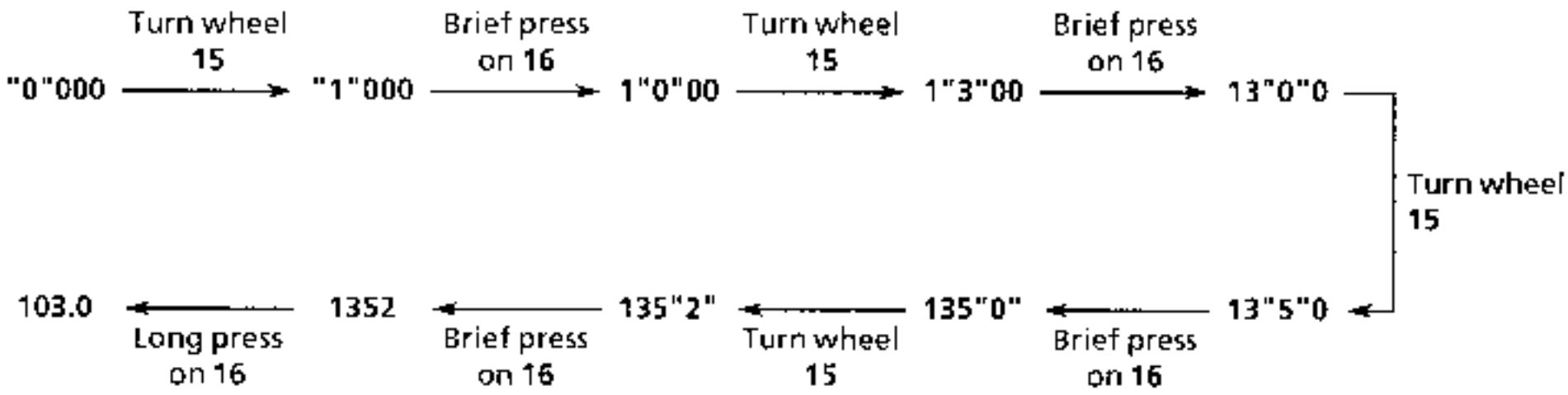
b) To enter the four figures of the code:
- adjust the first figure of the code which is flashing using the satellite tumblewheel **15**,
- briefly press button **16** on the satellite to validate the figure and allow the next figure to flash,
- repeat these two operations until all four code figures are displayed.

c) Press and hold button **16** on the satellite to validate the code.

The set will beep when the code has been validated and a frequency corresponding to the last heard station will be displayed.

The settings for volume, tonality and balance were stored, with a maximum threshold for volume.

Example :
A flashing figure is shown between inverted commas (**"0"**).
To enter code **1352** :



IMPORTANT :

If the code entered is incorrect, the set will beep and four dashes "----" will be displayed.
The code may only be entered using the method described above when the display shows "CODE" once more. For this, the set must be left turned on for one minute.
If the second attempt is unsuccessful, new attempts may be made, keeping the set turned on, but the delays between each operation (if a mistake is made) will increase: **2, 4, 8, 16** and **32 minutes**.

ON / OFF

Press button **1**.

When the power is turned on, the last heard programme (radio or cassette) is restored, if the -- before ignition feed was not cut.

NOTE : a system may be used to allow the set to be used without turning the vehicle ignition on (+ before ignition feed).

This function has a time limit of **15 minutes** at the end of which period the set will automatically turn off to avoid discharging the battery.

When – before ignition operation is cut by pressing button **1**, pressing the same button again restarts the timed period of **15 minutes**.

ADJUSTING SOUND LEVELS

Volume : buttons 9 and 11 on the front panel or **13** on the satellite.

Volume adjustment is not shown on the display.

A function on the satellite allows the sound to be cut instantaneously ("Mute" mode).

To do this, press both buttons **13** on the satellite at the same time. Repeating the action returns the volume to its previous level.

NOTE : the same result is obtained by pressing button **14** on a satellite of "**type 2**".

The "Mute" mode may also be left by increasing the volume level progressively using the "+" button on the satellite.

When this mode is active, this is the only time the display will show the sound level ; it shows "**0**".

Tonality

- **Bass:** Select the function by pressing button **8**, then make the adjustment using buttons **9** and **11** on the front panel.
- **Treble:** When the bass adjustment mode is active, pressing button **8** again switches to treble adjustment.
  Make the adjustment using buttons **9** and **11** on the front panel.

Adjustment scales

Bass		Treble		
LO	- 6	HI	- 6	**minimum**
LO	0	HI	0	**average**
LO	6	HI	6	**maximum**

- **Automatic loudness** : This function makes a physiological correction; it has a progressive action on bass notes depending on the volume.
  There is no special display.

Spatial sound distribution

Select left / right balance by repeatedly pressing button **8** then make the adjustment using buttons **9** and **11** on the front panel.

When the treble adjustment mode is active, pressing button **8** again switches to left / right balance adjustment.

Adjustment scales

0 - 9	**fully right**
9 - 9	**centre**
9 - 0	**fully left**

General information on the various adjustments

As soon as button **8** is pressed, the display shows the function selected and its setting.

If, after **4 seconds** no adjustment has been made, the display returns to its previous mode (display of a radio frequency or the message "**CASS**" if the cassette reader is being used).

These adjustments are unique and are recalled each time the power is turned on with, however, the application of a volume threshold.

If + before ignition feed is cut, the tonality and balance settings are set to the average level.

SELECTION OF THE WAVE BAND

- **using the radio front panel:**

  Selecting a wave band **GO (L)**, **PO (M)**, **FM (U)** or **FM Travelstore (UT)** : press button **10**.

- **Using the satellite** :

  Selecting a wave band **GO (L)**, **PO (M)**, **FM (U)** or **FM Travelstore (UT)** : press button **12.**

MANUAL FREQUENCY SEARCH

This may be in increasing or decreasing frequencies.

Select the wave band as described above:

- Briefly pressing button **5** or **7** : the frequency changes one step (**50 kHz** for **FM, 9 kHz** for **PO** and **3 kHz** for **GO**).

- Press and hold button **5** or **7** : the frequencies change quickly for as long as the button is depressed

AUTOMATIC SEARCH

Select the wave band as described above.

Briefly press button **16** on the satellite to start automatic searching with increasing frequencies only.

NOTE :

- The frequency search steps are different to those for manual searching; **100 kHz** for **FM, 9 kHz** for **PO** and **9 kHz** for **GO**.

- While the frequencies are being scanned, pressing one of buttons **5** or **7** stops the search and the frequency displayed at that moment is heard.

Search sensitivity levels

- For the first automatic search started after turning the set on, searching is carried out at the first sensitivity level (**local** = good reception).

- if no station is selected after scanning the complete FM band, the search starts again at the second sensitivity level (**DX** = average reception).
  If a frequency is selected, the indicator (A) is displayed for **30 seconds.**
  If the next search is not started within **30 seconds**, it will begin again using the "**local**" searching level.

The **DX** sensitivity level may also be selected by the user by pressing and holding button **10** until a beep is heard. Indicator (A) illuminates on the display.

When indicator (A) is illuminated, automatic searches are only carried out at this sensitivity level.

The "**DX**" level is deactivated **30 seconds** after the last press on button **16** ; indicator (A) extinguishes.

PRESELECTIONS

Programming

- Select a wave band: button **10** on the front panel or button 12 on the satellite.

- Search for a station manually or automatically.

- Press the desired preselection button **4** ; the sound turns off.

- Hold the button down until a beep is heard and the sound returns.
  The frequency displayed is programmed and the preselection number appears at (C) on the display.

Recall

Briefly press the required button **4** or turn the tumblewheel **15** on the satellite, after selecting a wave band.

NOTE : preselections for wave bands **PO (M)** and **GO (L)** are preprogrammed by the manufacturer. They may be modified by the user by following the method above.

AUTOMATIC PROGRAMMING IN FM or "Travelstore"

Automatic memorisation (**Travelstore**) is an extension of the automatic search command.

In one single operation this function searches and memorises the six strongest stations in the region, without knowing their wavelengths.

Automatic programming is started by pressing and holding (for more than **2 seconds**) button **16** on the satellite, regardless of the wave band which is active or even during cassette playback.

A beep will be heard.

- If the radio is playing, the sound will be cut.
  At the end of programming, the system beeps once more, the sound returns and the first preselection in **UT** is selected.

- if the cassette is playing, the display indicates the radio status during automatic programming. The system beeps when the process is complete and the message **"CASS"** returns to the display.

If less than six stations are found (insufficient level of reception), when a preselection is recalled, the intermittent display "----" indicates that that preselection could not be loaded with a new station and that the system is activating the last preselection for which the content was modified.

NOTE : pressing one of buttons **4**, **5**, **7** or **10** on the front panel or button **12** on the satellite stops the automatic programming process and activates the function required.

Inserting a cassette into compartment **2** does not interrupt the process if the **UT** wavelength was active when it was started.

Inserting a cassette stops radio playback and starts playing the cassette.

If there is already a cassette in the special compartment 2, pressing button 12 on the satellite once or a few times will select the "cassette reader" mode and start playback.

When a cassette is playing, the display indicates the active mode with the message "CASS".

The last active "radio state" may however be shown.

To do this, press one of buttons 4, 5, 7 or 10 on the front panel or button 16 on the satellite once.

Only when these buttons are pressed twice is the action actually carried out; pressing once will not interrupt cassette playback.

If the sound was cut during playback ("Mute" function), it is now returned.

If the second press does not occur within 10 seconds, the message "CASS" is displayed once more.

Fast winding

Partially depress button 3.

During fast winding, the radio will play the last station heard.

The radio mode is completely functional with corresponding display (see paragraph "Radio operation").

NOTE : fast winding may be started when the system is not in "cassette reader" mode.

Stopping fast winding

Fast winding is stopped:

- at the end of the tape, when a beep is heard,
- by pressing button 3 again (gently) ; playback begins again.

Stopping playback / Changing the source without ejecting the cassette

Pressing button 12 on the satellite activates the radio mode.

Cassette playback is stopped and the reading head moved aside.

Ejection

Completely depress button 3.

Playback is stopped, the cassette is ejected and the radio will play the last station heard.

1. Tuner

• **Wave bands**	PO - (M)	: 531 to 1 602 kHz
	GO - (L)	: 153 to 279 kHz
	FM	: 87.5 to 108 MHz
	UT	: 87.5 to 108 MHz
• **FM sensitivity**	6 µV (for S/B 26 dB at 93 MHz) Automatic search at 2 sensitivity levels. Travelstore search at 2 sensitivity levels (search from bottom of wave band).	

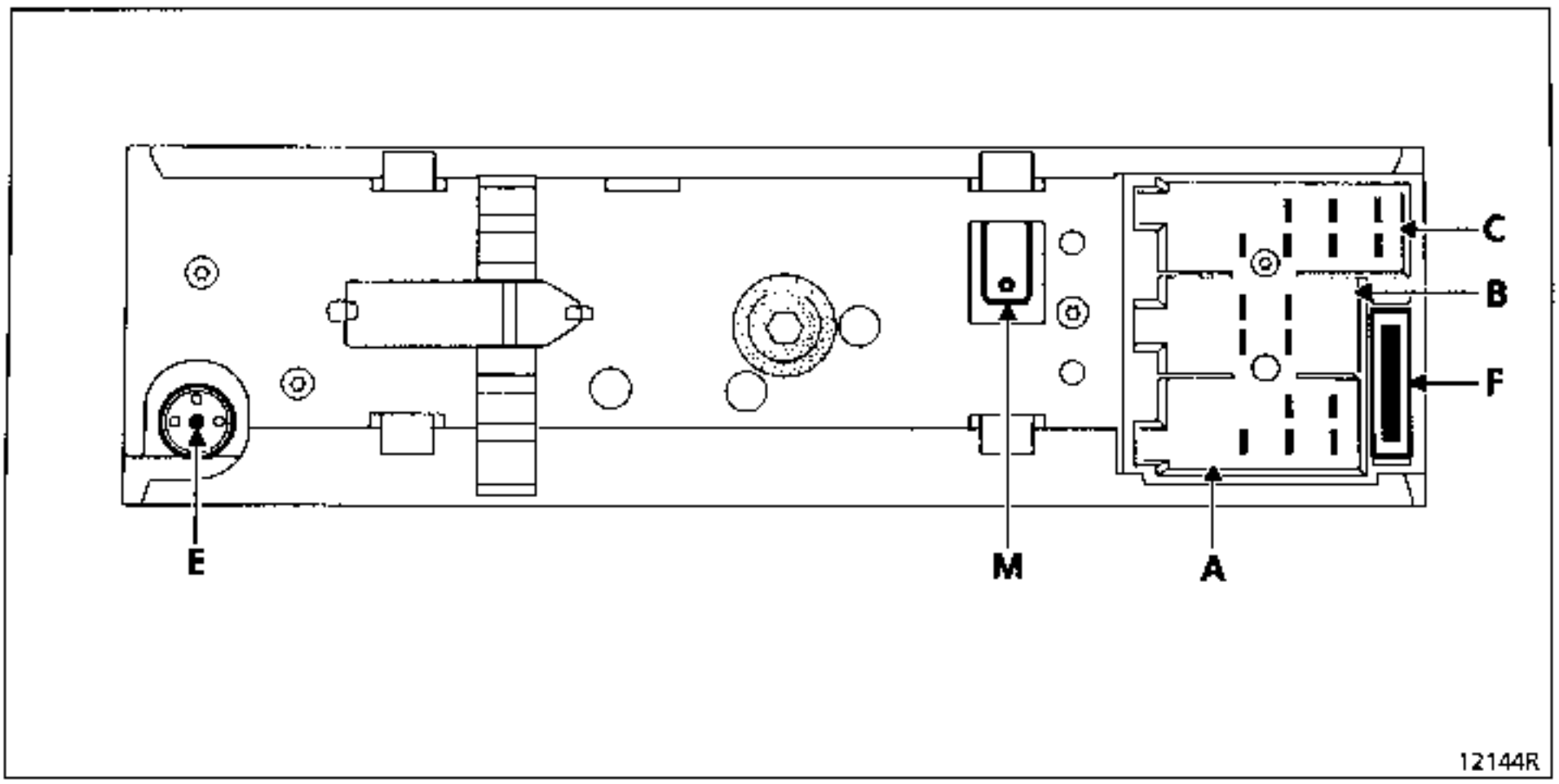
2. Cassette reader

• Soft satellite keys	
• Reading head	"Hard Permalloy"
• Tape speed	4.76 cm/s
• Wow and flutter	0.35 % WRMS
• Signal / noise ratio	> 43 dB
• Crosstalk	> 24 dB

3. Low frequency amplifier

• Output (4 Ohms : 14.4 V)	2 x 6 W ± 1 dB for D ≤ 10 %
• Frequency response	35 Hz to 16 kHz
• Balance	Right / Left
• Bass correction	± 14 dB at 60 Hz
• Treble correction	± 10 dB at 10 kHz

AUDIO SET



Feed connector (A)

Track	Allocation
1	Not connected
2	Not connected
3	+ before ignition
4	+ electric aerial
5	+ side lights (lighting)
6	+ accessories
7	Earth
8	

Speaker connection connector (B)

Track	Allocation
1	Not connected
2	Not connected
3	+ front right hand speaker
4	- front right hand speaker
5	+ front left hand speaker
6	- front left hand speaker
7	Not connected
8	Not connected

Satellite connection connector (C)

Track	Allocation
1	Not connected
2	Not connected
3	Not connected
4	Cable screened earth
5	To satellite
6	To satellite
7	To satellite
8	To satellite
9	To satellite
10	To satellite

E Aerial

F 5 Amp fuse

M Earth tab

A "test" mode allows all the segments in the display and the operation of the radio set controls and buttons to be checked.

Entering "test" mode

With the set off, simultaneously press the first preselection button **4** and button 10.
Then, while holding these buttons down, press button **1 "On/Off"** until the five figures appear on the display (at **B** and at **C**).

These figures define the software version for the set:

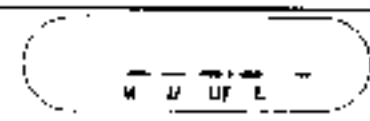
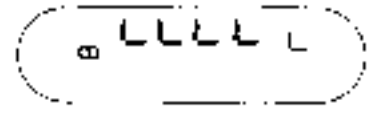
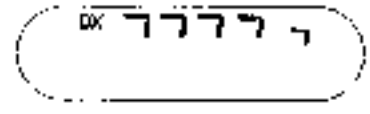
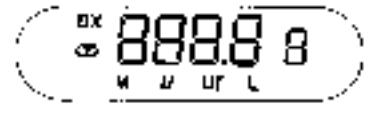
- the first figure defines the year (**6 for 1996**),
- the second figure indicates the month (in hexadecimal),
- the third figure shows the day,
- the small figure (at **C**) specifies the version number.

NOTE : if the cassette reader was active before entering "test" mode, the cassette will be played throughout the test.

In addition, **for all the following operations**, if you wait too long between actions, the button must be pressed twice to make the corresponding display appear.

Simultaneous check of the preselection keys and the display

From the software version display, press one of the six buttons **4** :

Button pressed	Display
4-1	
4-2	
4-3	
4-4	
4-5	
4-6	

Checking the other buttons

From the previous stage:

- Press button **10** :
  - the first press will show, on the display, the last frequency heard in the **UT** wave band,
  - the second press will show the last frequency heard in the **M (PO)** wave band,
  - the third press will show the last frequency heard in the **L (GO)** wave band,
  - the fourth press will return to the last state of simultaneous checking before button **10** was pressed.
- Press one of buttons **5** or **7** :
  - the software version is displayed again.

Special notes

- Pressing and holding button 8 displays four dashes at 8 (as if an incorrect code had been entered), followed by the corresponding display for checking button 4-1.

  This operation puts all the various commands back to their delivery settings:

  - the listening comfort settings return to an average value,

  - the AM wave band preselections are set to the manufacturer's programmed stations.

- Only an auditory test of the sound level can be used to check the volume buttons 9 and 11.

Leaving "test" mode

To leave this mode, turn the set off by pressing button 1.

CUSTOMER COMPLAINTS

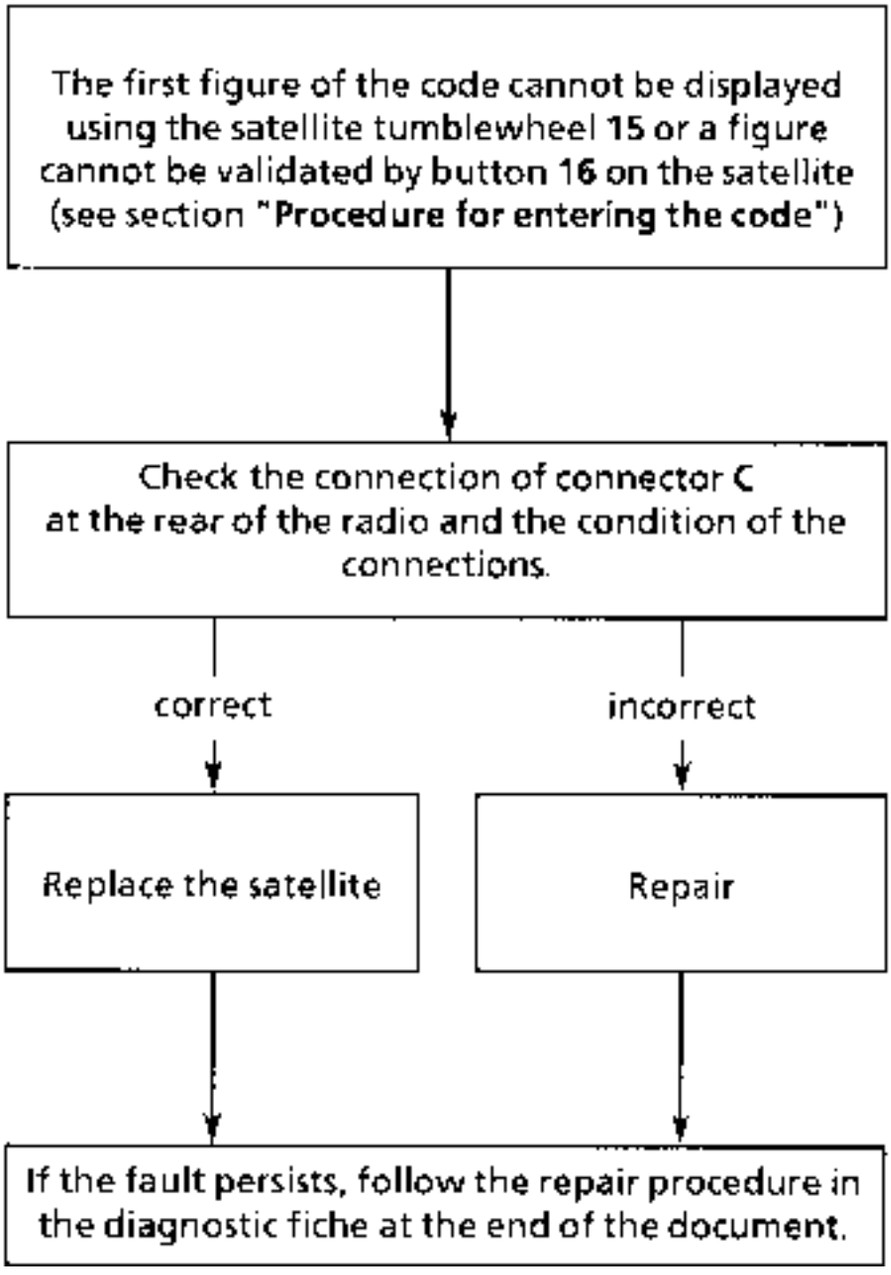
- When the **On / Off** button is pressed, the set does not come on.
- The first figure of the code cannot be displayed using the satellite tumblewheel or a figure cannot be validated by button **16** on the satellite.
- When the set is turned on using the **On / Off** button, it comes on and displays a frequency, but there is no reception.

When the **On / Off** button is pressed, the set does not come on.

Check:

- the fuse/s (depending on vehicle) on the passenger compartment fuse board (see **N.T. Wiring Diagrams** for the vehicle),
- the fuse **F (5 Amp)** at the rear of the radio (see previous section "**Connections**") ; and replace if necessary,
- the quality of the connections,
- the continuity of the feed lines:
  - before ignition,
  - accessories,
  - Earth.

If the radio still does not come on, follow the repair procedure in the diagnostic fiche at the end of the document.


The first figure of the code cannot be displayed using the satellite tumblewheel 15 or a figure cannot be validated by button 16 on the satellite (see section "Procedure for entering the code")
Check the connection of connector C at the rear of the radio and the condition of the connections.
correct
incorrect
Replace the satellite
Repair
If the fault persists, follow the repair procedure in the diagnostic fiche at the end of the document.

When the set is turned on using the **On / Off** button, it comes on and displays a frequency, but there is no reception.

Tune to an **FM** station which is well received in the area.

Good reception but radio interference.
Check:
- the aerial earth,
- the aerial coaxial cable.

Sound is heard, but high degree of interference.

Still no reception

Tune to a **GO (L)** station which is well received in the area.

Test with a pre-recorded cassette

No reception

Good reception
⇒ fault with **FM**.

Still no sound

Check:
- the aerial is correctly connected,
- the aerial coaxial cable.

(Test using another aerial and another coaxial cable).

Check the connection of connector **B** (see section "**Connections**") at the rear of the radio and check the condition of the connections. Does the fault persist?

yes

no

Check the connection of the various speakers and the condition of the connections.

End of fault finding

The fault persists.

Follow the repair procedure in the diagnostic fiche at the end of the document.

MUST BE ATTACHED TO THE EQUIPMENT
OBLIGATORY FOR APPLICATION OF THE WARRANTY

DIAGNOSTIC FICHE: RADIO – DISPLAY – CD PLAYER

COMPANY NAME: ..... TEL : ..... FAX : .....

COMPANY ADDRESS: .....

CONTACT NAME: .....

FULL DESTINATION PARTS DEPARTMENT CODE NO. : ..... Date : .. .../... .../... ...

VEHICLE : Type ..... Fabrication No.( ) Delivery date: .../ ...../ .../ ... ...

RADIO : Make: ..... Fabrication No.(*) or Type (*) : .....

CODE : ..... Serial No.(*) : .....

WARRANTY: YES / NO (Reply YES only for contractual warranty)

CUSTOMER COMPLAINT:

WORKSHOP DIAGNOSIS

GENERAL

- ☐ Does not come on
- ☐ no sound or weak sound
- ☐ Security code refused (Have you checked with customer relations department?)

On certain radios, the code may only be entered using the satellite

RADIO

- ☐ Poor reception in: ☐ FM ☐ FM RDS ☐ G.O. ☐ P.O.
- ☐ Interference in : ☐ FM ☐ FM RDS ☐ G.O. ☐ P.O. Engine ☐ Running ☐ Off

Specify circumstances: .....

- ☐ Button: ..... does not operate

CASSETTE

- ☐ Inserting ☐ Ejecting difficult or impossible
- ☐ Sound weak
- ☐ Damages tape
- ☐ Autoreverse broken
- ☐ Poor running (wowing)
- ☐ Button: ..... does not operate

COMPANY STAMP WITH DATE

C.D.

- ☐ Inserting ☐ Ejecting difficult or impossible
- ☐ No sound
- ☐ Button: ..... does not operate

AMPLIFIER

- ☐ Balance does not operate ☐ Front/rear ☐ Left / Right
- ☐ Speaker does not operate ☐ Front LH ☐ Front RH
- ☐ Rear LH ☐ Rear RH
- ☐ Equaliser does not operate ☐ Loudness (Check headphones switch) ☐ bass ☐ treble

DISPLAY

- ☐ Does not come on ☐ Display fault ☐ Clock / Temperature

SATELLITE

- ☐ Operating fault with satellite. Does the set work when the satellite is disconnected ☐ Yes ☐ No

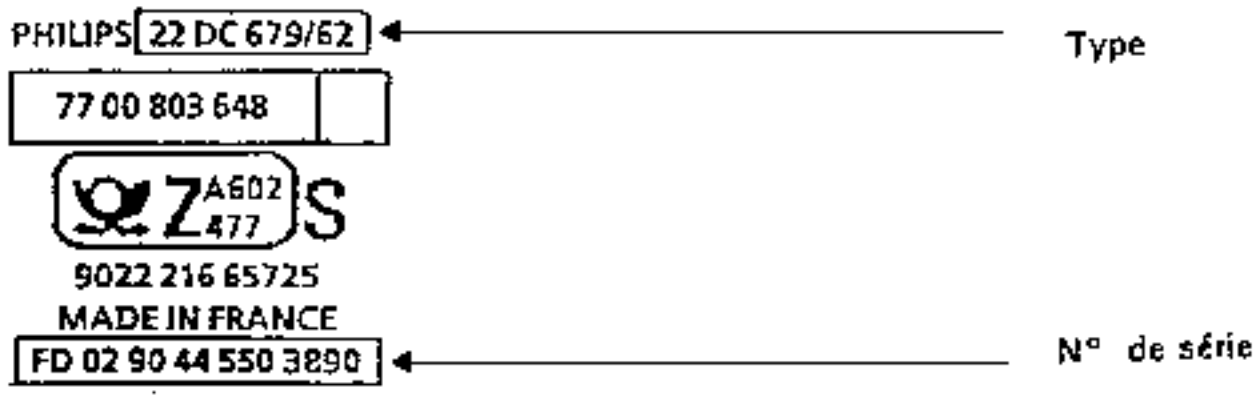
OTHER FAULTS - SPECIFY: .....

(*) Look for type and serial numbers

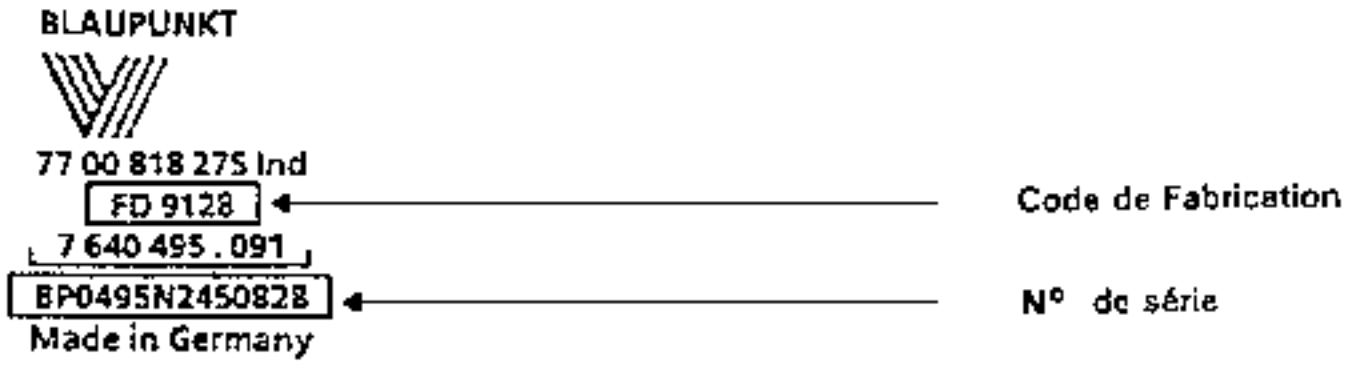
FAULT FINDING : Refer to the Workshop Repair Manual concerned

WARRANTY PROCEDURE - SEE DITG : 8/3 - 8/4 - 8/5 - 8/6 - 8/10

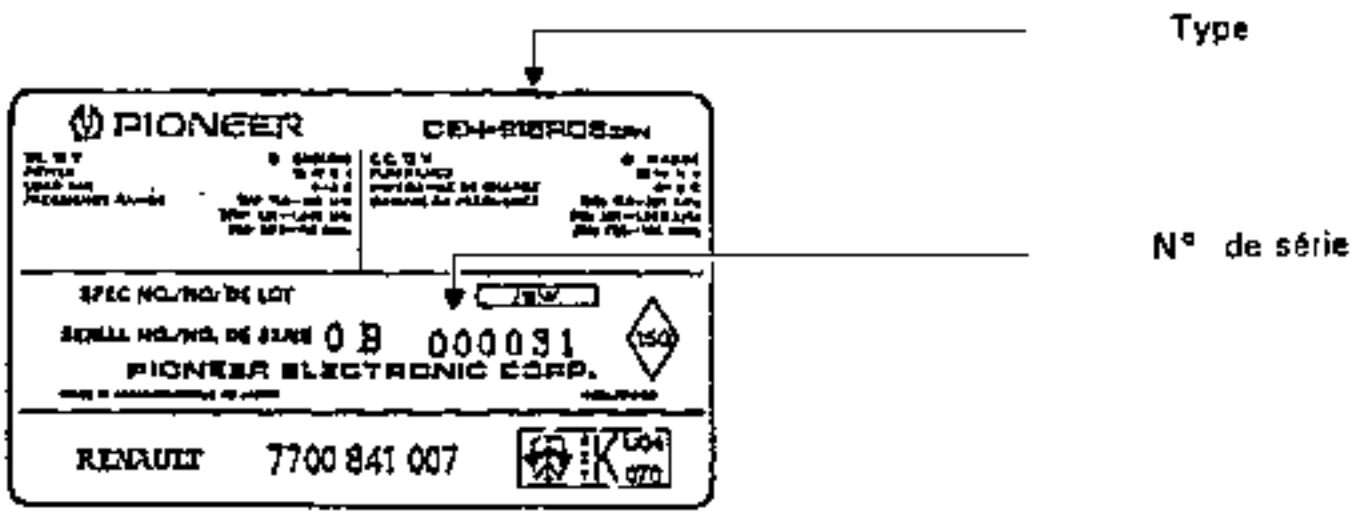
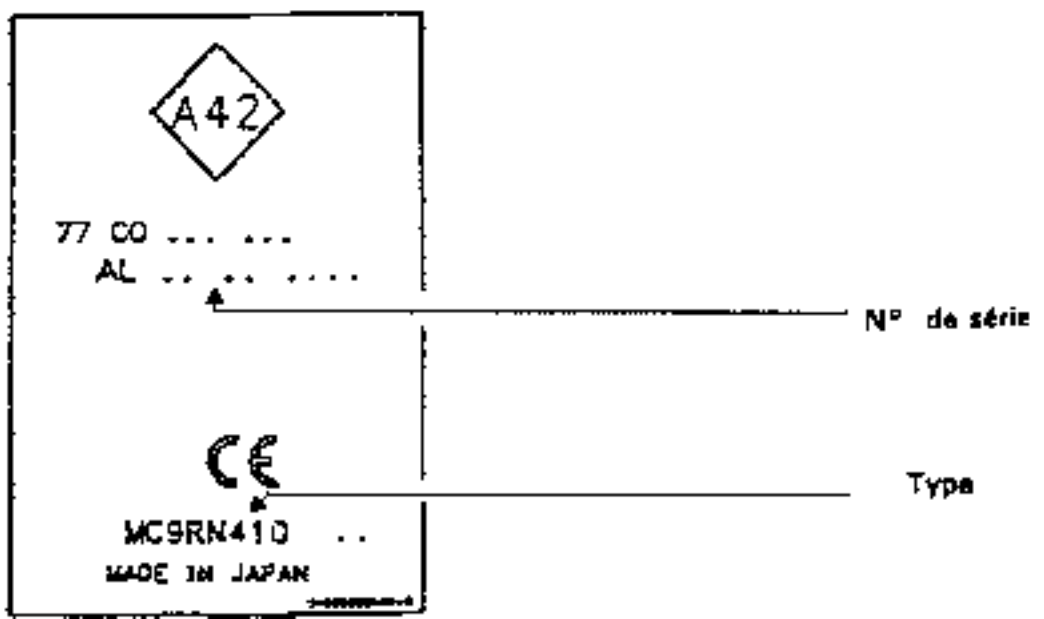
PHILIPS



BLAUPUNKT



PIONEER



ALPINE / LUXMAN