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NOTICE D'INSTALLATION DES TERMINAUX MOBILES (BER VERSION B)

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DOCUMENTS CONNEXES

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Procédure de Réalisation de la Documentation Exploitant
PMR/GEN/PCD/00072 01.04/FR

Maîtrise de la Documentation Exploitant de PMR/F
PMR/GEN/PCD/00014 04.01/FR

Guide de Rédaction d'un Document Exploitant
PMR/GEN/MEG/00055 01.01/FR

DOCUMENTS DE RÉFÉRENCE

Architecture Physique du Terminal MC9
MC9/TR/DD/0018 01.02/FR

Specification for speaker microphone
MC9/PRO/APR/0028 02.02/EN

Plan de développement CCP et BER/support simplifiés pour terminaux radio MC9600
MC9/PRO/DPL/0077 01.01/FR

System Requirement specification
PCG/SYS/DD/001 02.01/EN

Mobile control head commercial specification
MC9/PRO/APR/0080 01.02/EN

Compte rendu de la revue gate 0A du CCP
MC9/PRO/GES/0105 01.01/FR

Dictionnaire du système
MC9/PRO/APP/0001 03.03/FR

Cahier des charges de Rédaction BER large bande
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Mobile Terminal Installation Handbook (BER Version B)

*Notice d'Installation des Terminaux
Mobiles (BER Version B)*

*Instrucción de Instalación de los
Terminales Móviles (BER Versión B)*

*Installationsanleitung der
Mobilen Endgeräte (BER Version B)*

MCI9/TR/APP/00030 01.05/QL

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EQUIPMENT COMPLIANCE TO EUROPEAN STANDARDS

The equipment used for the configurations described in this document complies with the following European directive:

- "Radio Terminal and Telecommunications Equipment" (R&TTE) Directive no. 1999/5/CE.

Tests carried out have proven that the equipment complies with one or more of the following standards related to this directive: EN301489-5, EN55022, EN 55024, EN61000-3-2, EN61000-3-3, EN60950, or EN60335-1 and EN60335-29, EN300113-1/2 and recommendation 1999/519/CE (EMF).

During installation, the correct procedures must be followed in order to maintain compliance with European requirements.



CONFORMITÉ DES ÉQUIPEMENTS AUX DIRECTIVES EUROPÉENNES

Les équipements constituant les différentes configurations décrites dans ce document sont conformes à la directive européenne suivante :

- Directive "Equipements Terminaux Radio et de Télécommunications" (R&TTE) n° 1999/5/CE.

Les tests effectués ont prouvé que les équipements sont conformes à une ou plusieurs des normes suivantes relatives à cette directive : EN301489-5, EN55022, EN55024, EN61000-3-2, EN61000-3-3, EN60950 ou EN 60335-1 et EN60335-29, EN300113-1/2 et recommandation 1999/519/CE (EMF).

Lors des installations, il est impératif de respecter les règles de l'art en matière d'installation afin de conserver la conformité aux exigences européennes.



CONFORMIDAD DE LOS EQUIPOS CON LAS DIRECTIVAS EUROPEAS

Los equipos incluidos en las diferentes configuraciones descritas en el presente documento están en conformidad con la directiva europea siguiente:

- Directiva "Equipos Terminales Radio y de Telecomunicaciones" (R&TTE) n° 1999/5/CE.

Las pruebas efectuadas han demostrado que los equipos son conformes a una o a varias de las normas siguientes, relativas a dicha directiva: EN301489-5, EN55022, EN55024, EN61000-3-2, EN61000-3-3, EN60950 o EN 60335-1 y EN60335-29, EN300113-1/2 y recomendación 1999/519/CE (EMF).

Para efectuar la instalación se debe imperativamente respetar las reglas correspondientes para conservar la conformidad con las exigencias europeas.



ÜBEREINSTIMMUNG DER AUSRÜSTUNGEN MIT DEN EG-RICHTLINIEN

Die Ausrüstungen, aus welchen die verschiedenen in diesem Dokument beschriebenen Konfigurationen aufgebaut werden, entsprechen folgenden EG-Richtlinien:

- Richtlinie "Funkengerät- und Fernmeldewesenausrüstungen" (R&TTE) Nr. 1999/5/CE.

Die an diesem Material erfolgten Tests weisen nach, daß die Ausrüstungen einer oder mehreren der folgenden Normen in Zusammenhang mit den o. g. Richtlinien entsprechen: EN301489-5, EN55022, EN 55024, EN61000-3-2, EN61000-3-3, EN60950 oder EN60335-1 und EN60335-29, EN300113-1/2 und Empfehlung 1999/519/CE (EMF).

Bei der Installation des Materials muß der Stand der Technik im Bereich der Installationsarbeiten zwingend eingehalten werden, um die Übereinstimmung des Materials mit den EG-Richtlinien zu wahren.

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1 INTRODUCTION

1.1 PURPOSE

The purpose of this handbook is to describe the procedure for installing mobile terminal hardware in a vehicle. The terminals concerned by this handbook are those operated from a CCP (command and control panel).

This document is applicable as from the phase defined in Document <0> (see Section 1.3).

1.2 DISTRIBUTION

This handbook is intended for specialists in mobile terminal installation.

1.3 REFERENCE DOCUMENTS

- <0> Referential of the Operating and Maintenance Documentation
PSXXXX(according to the project)
- <1> TPS Technical Manual
PS8416 or PS8673
- <2> CCP User Guide
PS8430 or PS8683
- WB CCP User Guide
PS9289 or PS9290

1.4 ABBREVIATIONS

BER	: Boîtier Émission Réception (<i>radio transceiver</i>)
CCP	: Command and Control Panel
DC	: Direct Current
FDMA	: Frequency Dispatch Multiple Access
LS	: LoudSpeaker
RH	: Relative Humidity
SUP-BER	: SUPport BER (<i>radio transceiver bracket</i>)
SWR	: Standing Wave Ratio
TPS	: Terminal Programming Station
WB	: Wide Band

2 DESCRIPTION

2.1 PRESENTATION

Each mobile terminal is made up of an operating kit and an installation kit, plus any optional equipment.

The various operating kits available depend on the CCP model (Smart model with a 25–key keypad, Easy+ model with a 9–key keypad and Smart model with a 25–key alphanumeric keypad) and the type of radio BER which depends on the manufacturing technology used, the frequency ranges, and for encrypted networks, the type of encryption.

The various installation kits depend on the type of CCP and BER bracket.

2.2 COMPOSITION OF KITS

The various kits supplied by Matra Nortel Communications are as follows:

- operating kit:
 - Smart CCP main kit: HT1069, HT6782 or HT6991,
 - or
 - Easy+ CCP main kit: HT1315, HT6792 or HT6992,
- installation kit:
 - CCP car kit: HT1108A, HT1108B, HT1108C or HT1108D.

Each main kit is then presented in detail with a list of its components and a set of illustrations.

2.2.1 Operating kits

2.2.1.1 Smart CCP main kit – HT1069 or HT6782 (Plate A-I)

DESIGNATION	QUANTITY	REFERENCE	ITEM
A25 Smart CCP (25 keys)	1	53.1952.570.00 or 53.1952.571.00 ⁽¹⁾	3
Speaker microphone with its holder	1	HC1012	6–7
CCP extraction keys	1	53.1559.019.00	5
Radio BER version B	1	RA1585 or RA1621 ⁽²⁾	1

(1) The reference depends on the type of logo on the CCP.

(2) The reference depends on the frequency band and, for encrypted networks, the type of encryption.

Table 2.1 SMART CCP MAIN KIT COMPONENTS – HT1069 OR HT6782

2.2.1.2 WB Smart CCP main kit– HT6991 (Plate A-I)

DESIGNATION	QUANTITY	REFERENCE	ITEM
A25 Smart CCP (25–key alphanumeric keypad)	1	53.1952.030.00 or 53.1952.035.00 or 53.1952.050.00 or 53.1952.070.00 ⁽¹⁾	5
Speaker microphone with its holder	1	HC1012	6–7
CCP extraction keys	1	53.1559.019.00	5
Wide band radio BER version B	1	RA1634, RA1635, RA1636 or RA1637 ⁽²⁾	2

(1) The reference depends on the type of logo on the CCP.

(2) The reference depends on the frequency band and, for encrypted networks, the type of encryption.

Table 2.2 SMART WB CCP MAIN KIT COMPONENTS– HT6991

2.2.1.3 Easy+ CCP main kit – HT1315 or HT6792 (Plate A-I)

DESIGNATION	QUANTITY	REFERENCE	ITEM
A9 Easy+ CCP (9 keys)	1	53.1952.575.00 or 53.1952.040.00	8
Speaker microphone with its holder	1	HC1012	6-7
CCP extraction keys	1	53.1559.019.00	5
Radio BER version B	1	RA1585 or RA1621 ⁽¹⁾	1

(1) The reference depends on the frequency band and, for encrypted networks, the type of encryption.

Table 2.3 EASY+ CCP MAIN KIT COMPONENTS– HT1315 OR HT6792

2.2.1.4 WB Easy+ CCP main kit – HT6992 (Plate A-I)

DESIGNATION	QUANTITY	REFERENCE	ITEM
A9 Easy+ CCP (9 keys)	1	53.1952.575.00 or 53.1952.040.00	8
Speaker microphone with its holder	1	HC1012	6-7
CCP extraction keys	1	53.1559.019.00	5
Wide band radio BER version B	1	RA1634, RA1635, RA1636 or RA1637 ⁽¹⁾	2

(1) The reference depends on the frequency band and, for encrypted networks, the type of encryption.

Table 2.4 WB EASY+ CCP MAIN KIT COMPONENTS – HT6992

2.2.2 Installation kits

2.2.2.1 CCP car kit – HT1108A or HT1108B (Plate A-II)

Note: The car kits HT1108A and B include a 7.5 m system cable. A 10 m cable with the reference HG4354B is also available with kit HT6457B.

DESIGNATION	QUANTITY	REFERENCE	ITEM
CCP holder:	1		
• Car DIN holder (HT1108A kit)	1	53.1762.511.00	2
• Console mounting kit (HT1108A kit)	1	HT6368	3
or			
• Dashboard holder (HT1108B kit)		53.1559.020.00	8
BER transceiver bracket (version B) fitted with a power supply filter and cable assembly	1	HR1348	1
CCP system cable kit including:	1	HT1106	4
• MOLEX 2-way male connector	1	PX283C/PX283Z	
• System cable 7.5 m	1	HG4468A	
Connection kit including:	1	HT1107A	6
• power supply fuse holder	1	PK1171	
• 7.5A fuse	1	PK1172	
• 2-way female connector for power supply cable	1	PX1051, PX1052, PW849	
• clip	2	PX175	
• Sub-D 25-pin connector adapter including a gasket, two spacers and two washers	1	HR5623	7

Table 2.5 CCP CAR KIT COMPONENTS – HT1108A OR HT1108B (1/2)

DESIGNATION	QUANTITY	REFERENCE	ITEM
Screw kit including:	1	HT0701	5
• heat shrinkable sheath	6 cm		
• M4X6 F Z screw	4		
• M4X06 CBL Z screw	4		
• M5X18 CBL Z screw	4		
• 5.3x20x5 insulating washer	8		
• 5 mm diameter M7 aluminium washer	4		
• D15H12 damping column	6		
• connector protective cap	2		
Mobile terminal installation handbook (BER version B)	1	PS8432	–

Table 2.5 CCP CAR KIT COMPONENTS – HT1108A OR HT1108B (2/2)

2.2.2.2 CCP car kit – HT1108C or HT1108D (Plate A–III)

Note: The car kits HT1108C and D include a 7.5 m system cable. A 10 m cable with the reference HG4354B is also available with kit HT6457B.

DESIGNATION	QUANTITY	REFERENCE	ITEM
CCP holder	1		
• Car DIN holder (HT1108C kit)	1	53.1762.511.00	2
• Console mounting (HT1108C kit)	1	HT6368	3
or			
• Dashboard holder (HT1108D kit)		53.1559.020.00	7
BER transceiver bracket (version B) fitted with a power supply filter and cables assembly	1	HR6237	1
CCP system cable kit including:	1	HT6457A	4
• MOLEX 2–way male connector	1	PX283C/PX283Z	
• system cable 7.5 m	1	HG4354A	
• gasket	1	PW1413	
Connection kit including :		HT1107	6
• power supply fuse holder	1		
• 7.5A fuse	1		
• 2–pin female connector for power supply cable	1		
• clip	2		

Table 2.6 CCP CAR KIT COMPONENTS – HT1108C OR HT1108D (1/2)

DESIGNATION	QUANTITY	REFERENCE	ITEM
Screw kit including:	1	HT0701	5
• heat shrinkable sheath	6 cm		
• M4X6 F Z screw	4		
• M4X06 CBL Z screw	4		
• M5X18 CBL Z screw	4		
• 5.3x20x5 insulating washer	8		
• 5 mm diameter M7 aluminium washer	4		
• D15H12 damping column	6		
• connector protective cap	2		
Mobile terminal installation handbook (BER version B)	1	PS8432	–

Table 2.6 CCP CAR KIT COMPONENTS – HT1108C OR HT1108D (2/2)

2.2.3 Loudspeaker kit – HC1040 (optional) (Plate A–IV)

The loudspeaker kit supplied by MNC is an optional item.

This kit comprises a set of two loudspeakers (item 3), each fitted with a cable, four securing screws (item 4) and a positioning template (item 2) with installation instructions (on inside flap of packing box (item 1)).

Note: The loudspeaker kit is used to equip two mobile terminals.

2.3 EQUIPMENT SUPPLIED LOCALLY

This section gives the characteristics of the equipment which can be supplied locally.

Such equipment must comply with current standards and with the safety precautions for vehicle equipment.

2.3.1 Antenna

The antenna is specific to each customer and must be specially adapted to the frequency bands of the PMR system.

The characteristics of the antenna must be the following:

- permissible power : 20 W,
- SWR : < 1.5,
- impedance : 50 Ω ,

- directivity : omni directional,
- gain : > 0 dB relative to $\frac{1}{4}$ wave whip.

2.3.2 Antenna cable

The antenna cable must be a coaxial screened double braided cable, type RG214 for example.

The characteristics of the antenna cable must be the following:

- impedance : 50 Ω ,
- cable loss : < 1 dB,
- connector : TNC male.

2.3.3 Power supply cable

The power supply cable must include two wide diameter conductors of at least 1.5 mm² protected in a mechanical housing.

The power supply voltage drop in the cable must be under 300 mV for a current of 3 A (transmission at 10 W).

The power supply cable must only be used for the mobile terminal power supply.

2.3.4 External loudspeaker (optional)

The mobile terminal can use an external loudspeaker. The loudspeaker can be supplied by the manufacturer (see Section 2.2.3) or locally.

If supplied locally, it must have the following characteristics :

- power : 15 W,
- impedance : 4 Ω.

The loudspeaker cable must be an audio screened or non-screened cable with two wires. The cable is connected to the system cable via the 2-pin female connector included in the system cable kit.

2.3.5 User Data Terminal (optional)

The User Data Terminal (UDT) is a laptop PC.

The UDT cable must be a screened single braided cable, type RG250, for example. The cable is connected to the system cable via an HE501 9-pin male connector.

2.4 SPECIFICATIONS

2.4.1 Physical specifications

Dimensions of BER (w x h x d):

- 220 x 43 x 168 mm

Dimensions of BER bracket HR1348 or HR6237 (w x h x d):

- 240 x 65 x 220 mm

Dimensions of CCP (h x w x d):

- 48 x 172 x 51 mm

Dimensions of CCP DIN holder (h x w x d):

- 48 x 172 x 51 mm

Dimensions of CCP dashboard holder (h x w x d):

- 80 x 208 x 45 mm

Weight of BER:

- 1.7 kg

Length of system cable:

- Cable HG4468A or HG4354A: 7.5 m
- Cable HG4468A or HG4354B: 10 m

2.4.2 Electrical specifications

Power supply:

- Battery DC 12 V external supply

(see tolerances in Section 2.4.3.1)

Maximum consumption:

- in transmit mode (max. power): 5 A
- in receive mode: 0.5 A

Power supply filter protection:

- fuse: 7.5 A

2.4.3 External interface specifications

2.4.3.1 Power supply input

- DC source: between 10.8 V and 15.6 V at the end of the power supply cable, battery side, respecting the conditions in Section 2.3.3.

2.4.3.2 Antenna output

- TNC female socket
- Impedance: 50 Ω

2.4.4 Environmental specifications

Operation:

- Dry heat : standard IEC 68–2–2 + 55 °C, 30% RH, 16 h
- Cold : standard IEC 68–2–1 – 20 °C, 16 h
- Humid heat : standard IEC 68–2–56 + 40 °C, 95 % RH,
21 days

Storage/transport:

- Dry heat : standard IEC 68–2–2 + 70°C, 30% RH,72 h
- Cold : standard IEC 68–2–1 –40 °C, 72 h
- Humid heat : standard IEC 68–2–30 + 25 °C, 98 % RH,
+ 55 °C, 93% RH,

3 SAFETY PRECAUTIONS

This chapter should be read and understood before installing terminals.

On-site work should be performed by qualified staff.

The mobile terminal is powered with direct 13.2 V.

The power supply is protected by a 7.5 A fuse installed before the BER bracket.

Before beginning an installation, determine the locations of the various parts of the terminal (CCP, SUP-BER, antenna, cable routing, etc.).

The time devoted to determining the right locations will be compensated by the time saved in carrying out the work.

Disconnect power supply cables to prevent accidental short-circuits during work on the electrical circuit.

Some vehicles are fitted with an isolating switch between the battery negative terminal and chassis ground. This terminal will be seriously damaged if the starter is activated with the battery switch open. In this case, the negative power supply cable should be connected directly to the battery switch on the chassis side.

If the vehicle is fitted with a 24 V battery, an adaptor must be used.

When using a drill, carefully examine the location to avoid drilling through an interior reinforcement, an electrical cable, a pipe or a hidden fuel tank.

Cable routing should be determined with great care. As far as possible, separate the antenna and the system cable routings, in order to avoid coupling effects.

Cables should be laid under plinths or linings to protect them effectively against physical damage. They should be routed well away from electrical cables to prevent induced interference.

Do not lay cables over sharp metal edges or near hot sections.

Do not shorten the cables.

Cables should be secured along their route. Check that they will not be pinched by other moving parts.

The bending radius of the car system cable should be at least 20 mm.

When securing the terminal, take account of the coaxial cable bending which should comply with manufacturer standards.

Make sure that the transceiver can be easily inserted into its bracket.

CAUTION: In extreme operating conditions (high ambient temperature, transmitting for a long period, BER fitted in a motor bike “Top box”) the metal box of the BER may reach high temperatures. The symbol below on the BER warns the user of the presence of hot parts:



The user is thus advised to make sure that the BER has not been subject to such extreme conditions before he uses the BER. If it has been, the transmission should be turned off to let the BER cool down.

4 INSTALLATION

4.1 TOOLS AND PRODUCTS

The following tools and products are required to install a mobile terminal:

- a standard tool kit (screwdrivers, open-end wrenches, crimping pliers, wire strippers, etc.),
- an electric drill with a set of drills,
- a multimeter,
- conducting grease (Type PCC80 KRISTAL, for example).

4.2 INSTALLATION BLOCK DIAGRAMS

4.2.1 Mobile terminal with car kit HT1108A or B

The figure below shows the installation block diagram of a mobile terminal with car kit HT1108A or B.

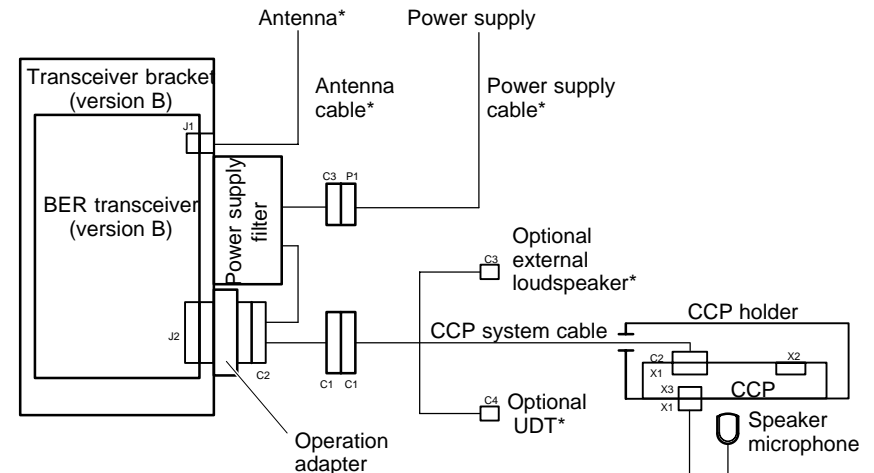
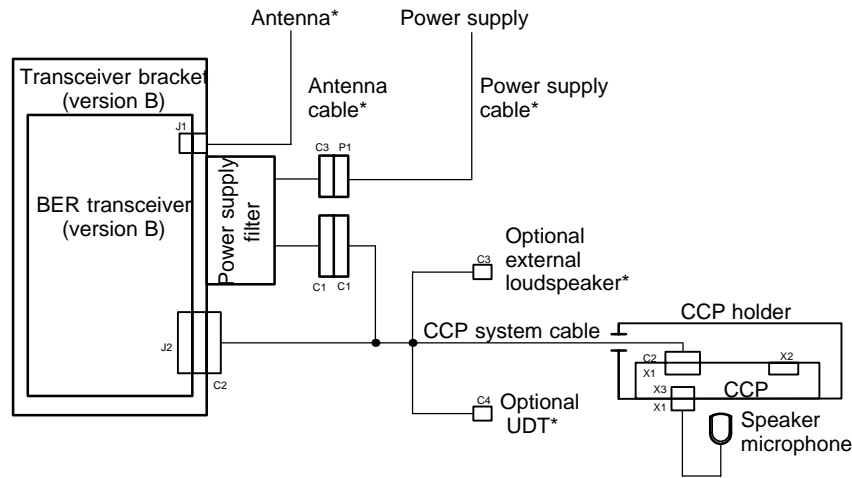


Figure 4.1 INSTALLATION BLOCK DIAGRAM OF A TERMINAL WITH CAR KIT HT1108A OR B

4.2.2 Mobile terminal with car kit HT1108C or D

The figure below shows the installation block diagram of a mobile terminal with car kit HT1108C or D.



*Equipment not supplied by the manufacturer.

Figure 4.2 INSTALLATION BLOCK DIAGRAM OF A TERMINAL WITH CAR KIT HT1108C OR D

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4.3 EQUIPMENT INSTALLATION PROCEDURE

4.3.1 Antenna

The antenna should be installed vertically, preferably in the centre of a horizontal metal base. If the vehicle roof is not made of metal, it is essential to fit a metal sheet or mesh under the antenna base. The base should be as large as possible.

If the antenna cannot be installed on the roof for major reasons, a compromise should be sought bearing in mind that a reduction in performance will result.

Installing the antenna on one of the wings of the car will provide the worst radiation diagram.

If, however, such a location has to be considered, the antenna should be installed mid way along the wing to obtain the best result.

The antenna base must be carefully grounded. To provide a good electrical contact, strip the paint under the antenna base and protect the bodywork against corrosion using copper charged conducting grease (e.g.: PCC80 KRISTAL), which also helps to ensure a durable electrical contact.

The electronic devices of some vehicles may be disturbed by terminal transmission, and may conversely disturb the mobile terminal by spurious radiation.

The human body should not be subjected either to prolonged exposure of an antenna located too close (20 cm) without a metal shield being interposed.

For a temporary installation, use an antenna with a magnetic base placed in the centre of the roof.

Note: The transceiver is protected in the event of accidental switching over to transmit without an antenna.

CAUTION: Whenever work has been carried out on the antenna circuit, it is essential to check that the SWR (Standing Wave Ratio) remains less than 1.5.

4.3.2 Antenna cable

- Route the antenna cable to the BER transceiver, taking care to respect:
 - the safety precautions given in Chapter 3,
 - the radius of curvature recommended by the coaxial cable manufacturer.
- On the antenna cable end, connect a TNC connector.

4.3.3 Power supply cable (Plate A–V)

- Route the power supply cable from the vehicle battery to the BER transceiver bracket following the safety precautions given in Chapter 3.
- On the BER transceiver bracket side, connect the AMP 2–way female connector (item 9) supplied in the connection kit:
 - strip the two wires of the power supply cable (item 12),
 - put a sealing ring (item 11) on each wire, positioning the small diameter towards the connector,
 - crimp the contacts (item 10) on the two power supply wires,
 - insert the contacts into the connector (item 9) with the +12 V battery on terminal 2 of the connector and the vehicle earth on terminal 1 of the connector,
 - lock the two contacts in the connector by pushing on the locking cage (item 8) located at the front of connector ,
 - insert the two sealing rings into the openings of the connector.

- Install on the + battery wire the fuse holder (item 5) and fuse (item 4) assembly supplied with the connection kit:

Note: The fuse holder and fuse assembly must be placed near the battery.

- cut the + battery (item 2) wire and strip about 20 mm from the two wires,
 - insert each stripped wire into the fuse holder,
 - crimp the + battery wire on each side of the fuse holder : crimp directly on the fuse holder (items 3 and 6) dull surfaces,
 - place the fuse (item 4) in the fuse holder (item 5).
- If necessary, install a battery clip on each wire of the power supply cable.

4.3.4 System cable

The radius of curvature of the system cable inside the vehicle must not exceed 20 mm.

The cable system must be installed according to the instructions detailed in Chapter 3. The system cable terminal connections must be near the locations of the different equipment of the mobile terminal (CCP, transceiver, etc.).

The length of the system cable is either 7.5 meters or 10 meters. Each system cable terminal connection (to the CCP bracket, to the external loudspeaker and to the mobile data terminal) is 1 meter in length.

4.3.5 External loudspeaker (optional) (Plate A–V)

- The loudspeaker should be installed according to the manufacturer's recommendations and the safety precautions given in Chapter 3.
- Route the loudspeaker cable to the loudspeaker connector on the system cable (item 13).
- On the loudspeaker cable, connect the MOLEX 2-pin male connector included in the system cable kit:
 - cut any connectors on the loudspeaker cable (items 16 and 18),
 - strip the two loudspeaker wire ends,
 - crimp the two MOLEX connector contacts (item 15),
 - insert the contacts into the connector (item 14) following the polarity shown in Plate A–V,
 - connect the loudspeaker cable connector to the system cable connector (item 13).

4.3.6 Support BER version B – HR1348 or HR6237 (Plate A–VI)

The transceiver bracket should be installed according to the safety precautions given in Chapter 3.

For the installation position of the transceiver bracket, the following precautions must be applied:

- access to the transceiver must be free and allow the transceiver to be easily installed and removed,
- connection of the cables must be free and without constraint for the cables and their connector, respecting the bending radius of the cable.
- the BER should be positioned so as to be kept as cool as possible.

Use the positioning washers (item 11) and damping column of the screwing kit to seat the transceiver bracket so as to protect it from vibration. Check that the transceiver bracket is still seated on its 4 bosses (item 5).

The transceiver bracket is secured by 4 screws or other means. The length and the type should be adapted to the type of vehicle surface.

When using studs or threaded rods check that the length of threaded rod (item 12) coming out from the bottom of the transceiver bracket boss do not exceed 9 mm. If the length is more than 9 mm, insert a positioning washer under the transceiver bracket or reduce the length of the threaded rods.

Make the connections corresponding to the type of BER bracket:

- BER bracket, reference HR1348 (item 6):
 - connect the system cable Sub-D 15-pin male connector (item 1) to the BER bracket Sub-D 15-pin female connector (item 2),
 - tighten the two system cable connector screws,
 - connect the power supply cable 2-pin AMP female connector (item 4) to the BER bracket 2-pin AMP male connector (item 3) and make sure they are properly locked together,
- BER bracket, reference HR6237 (item 10):
 - connect the system cable 2-pin AMP male connector (item 7) to the BER bracket 2-pin AMP female connector (item 8) and make sure they are properly locked together,
 - connect the power supply cable 2-pin AMP female connector (item 4) to the BER bracket 2-pin AMP male connector (item 9) and make sure they are properly locked together,

4.3.7 Transceiver version B

CAUTION: It is recommended not to hinder the natural convection around the transceiver installed in the vehicle. If, however, under exceptional, temporary circumstances, the car terminal is installed in a box, such a box should not be smaller than the box for the motor-bike terminal option unit (minimum dimensions: 270 x 255 x 105 mm).

4.3.7.1 Preparing the BER (Planche A–VII)

Note: Before installing the BER, make sure it has been loaded, configured and customised via the TPS (see Section 1.3, Document <1>).

- Place the gasket (item 4) on the radio BER version B (item 1) or wide band radio BER version B (item 3) Sub-D 25-pin male operating connector (item 2),

Note: The gasket (item 4) is supplied with the connector kit HT1107 contained in car kits HT1108A and B and with the system cable kit HT6237 contained in car kits HT1108C and D.

The gasket should still be fitted on the wide band radio BER Sub-D 25-pin male connector even if the connector already has a gasket fitted.

- Terminal with car kit HT1108A or B: fit the Sub-D 25-pin adapter (item 5):
 - connect the Sub-D 25-pin adapter (item 5) to the BER (item 1 or 3) Sub-D25-pin male operating connector (item 2),
 - secure the adapter (item 5) with the two spacers (item 6).

4.3.7.2 Installing the BER (Plate A–VIII)

- Unlock the maintaining flange (item 4) by turning the locking mechanism key.
- Remove the maintaining flange (item 4).
- Offer up the BER (item 3) to the BER bracket (item 8 or 10) pointing the BER connectors towards the BER bracket power supply filter (item 2).
- Insert the BER (item 3) in the bracket lugs (item 5).
- Put back the maintaining flange (item 4) and lock it in place.
- Make the following connections corresponding to the type of BER bracket:
 - BER bracket – HR1348 (item 8):
 - ◆ connect the BER bracket (item 8) Sub–D 25–pin connector (item 7) to the Sub–D 25–pin adapter (item 6) and lock it,
 - ◆ connect the antenna cable (item 1) to the BER antenna cable,
 - BER bracket – HR6237 (item 10) :
 - ◆ connect the system cable Sub–D 25–pin connector (item 9) to the BER Sub–D 25–pin operating connector (item 3) and lock it,
 - ◆ connect the antenna cable (item 1) to the BER antenna cable.

4.3.8 CCP

4.3.8.1 CCP car DIN holder (Plate A-IX)

Note: The CCP car DIN holder (item 2) has two removable metal stops (item 5). As these stops are asymmetrical, the distance between them depends on how they are mounted. The distance can be either 80 mm, 85 mm or 91 mm.

Before installing the car DIN holder, make sure the distance is 91 mm. If it is not, change the way they are mounted so that the damping pad (item 6) is turned towards the CCP.

- Remove the two adhesive tapes retaining the two fasteners (item 3) on the CCP car DIN holder (item 2).
- Position the car DIN holder (item 2) in the opening of the mounting surface (item 1).
- Install the two fasteners (item 3) securing the CCP car DIN holder (item 2),
and/or
fit the four slots (item 7) and four fasteners (see item 3, plate A-II and A-III) of the desktop mounting kit,
- Unscrew the screw (item 4) of each fastener (item 3) until the CCP car DIN holder (item 2) is secured.
- Extract the system cable connector through the opening of the CCP car DIN holder.

4.3.8.2 CCP dashboard holder (Plate A–IX)

Note: The CCP dashboard holder allows the CCP to be installed on a dashboard or on all horizontal surfaces.

- Position the CCP dashboard holder (item 9) in its location.
- Secure the CCP dashboard holder (item 9) using the two screws (item 8). Tilt the holder cradle to the rear, to facilitate access to the screws.
- Remove the cable guide ring (item 11) from the rear panel of the CCP dashboard holder (item 9).
- Insert the system cable connector (item 10) in the opening of the rear panel of the CCP dashboard holder.
- Put the cable guide ring (item 11) on the system cable. Make sure the cable guide ring is the right way round.
- Install the cable guide ring (item 11) on the rear panel of the CCP dashboard holder.

4.3.8.3 CCP (Plate A–X)

- Position the CCP (item 4) near its car DIN holder (item 5) or dashboard holder.
- Connect the Sub–D 25–pin female system cable connector (item 6) to the Sub–D 25–pin male connector of CCP (item 4) rear panel.
- Put the CCP on the holder and push it until it is locked on each side.
- Connect the speaker microphone (item 2) connector (item 3) to the front panel connector of CCP.

- Note:** Two extraction keys (item 1) are supplied with the CCP. These are used to remove the CCP from its holder. To do this:
- place a key (item 1) on each side of the CCP (item 4) turning the pins inwards,
 - insert the two keys (item 1) in the lateral openings of the desktop holder,
 - press the keys (item 1) to unclip the CCP on each side,
 - remove the keys (item 1) and the CCP (item 4).
- Install the speaker microphone holder (item 7) and secure it with the two screws (item 8).
 - Install the speaker microphone (item 2) on its holder (item 7).

4.4 CHECKING THE TERMINAL INSTALLATION

Connect the power supply cable to the battery observing the polarity indicated in Section 4.3.3.

Having completed the installation, various checks should be carried out before starting up the terminal.

Check the:

- presence and polarity of the power supply voltage,
- electrical continuity between the body of the antenna coaxial plug and ground,
- installation resistance between the antenna strand and chassis ground,
- continuity between the antenna and the core of the coaxial plug
- external connections to the terminal.

The voltage drop in the power supply cable should be less than 300 mV, for a current of 3 A (with a 10 W terminal transmission power).

5 STARTING UP / SHUTTING DOWN

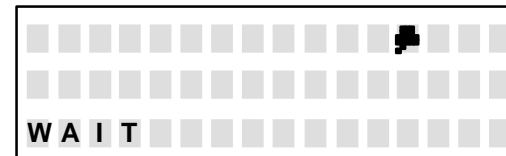
5.1 PRESENTATION OF THE CCP(PLATE A–XI)

Plate A–XI shows the main sub–assemblies of the CCP.

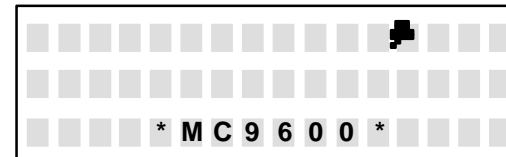
5.2 STARTING UP THE TERMINAL (PLANCHE A–XI)

- Switch on the terminal by pressing the call selector – On/Off button (item 5) of the CCP.

The terminal emits 2 consecutive beeps and the message “WAIT” is displayed for a few seconds,

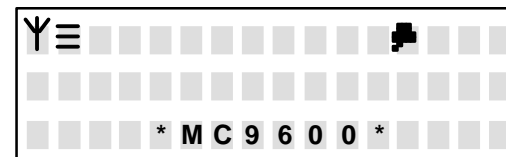


followed by the welcome message.



Note: In certain cases the project name replaces the “*MC9600*” message on the display.

If the terminal is within the range of an operating station, the registration process is initiated until the antenna symbol Ψ and field level symbol \equiv are displayed.

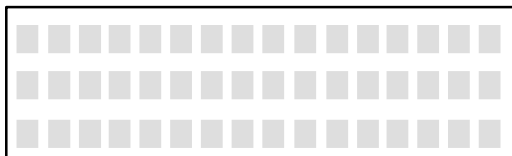


It is then possible to make a call (if authorized by the network): refer to the CCP User Guide (see Section 3, Document <2>).

Check that the call is not degraded by the exterior environment.

If the terminal does not operate, check that the transceiver has been loaded, configured and customized (see Section 3, Document <1>).

- To switch off the terminal press the call selector – On/Off button (item 5) of the CCP until a beep is emitted.



Legend

- 1 – BER transceiver bracket (version B)
- 2 – Car DIN holder (kit HT1108A)
- 3 – Console mounting kit
- 4 – CCP system cable kit
- 5 – Screw kit
- 6 – Connection kit
- 9 – Sub-D 25-way connector adapter
- 10 – Dashboard holder (kit HT1108B)

Légende

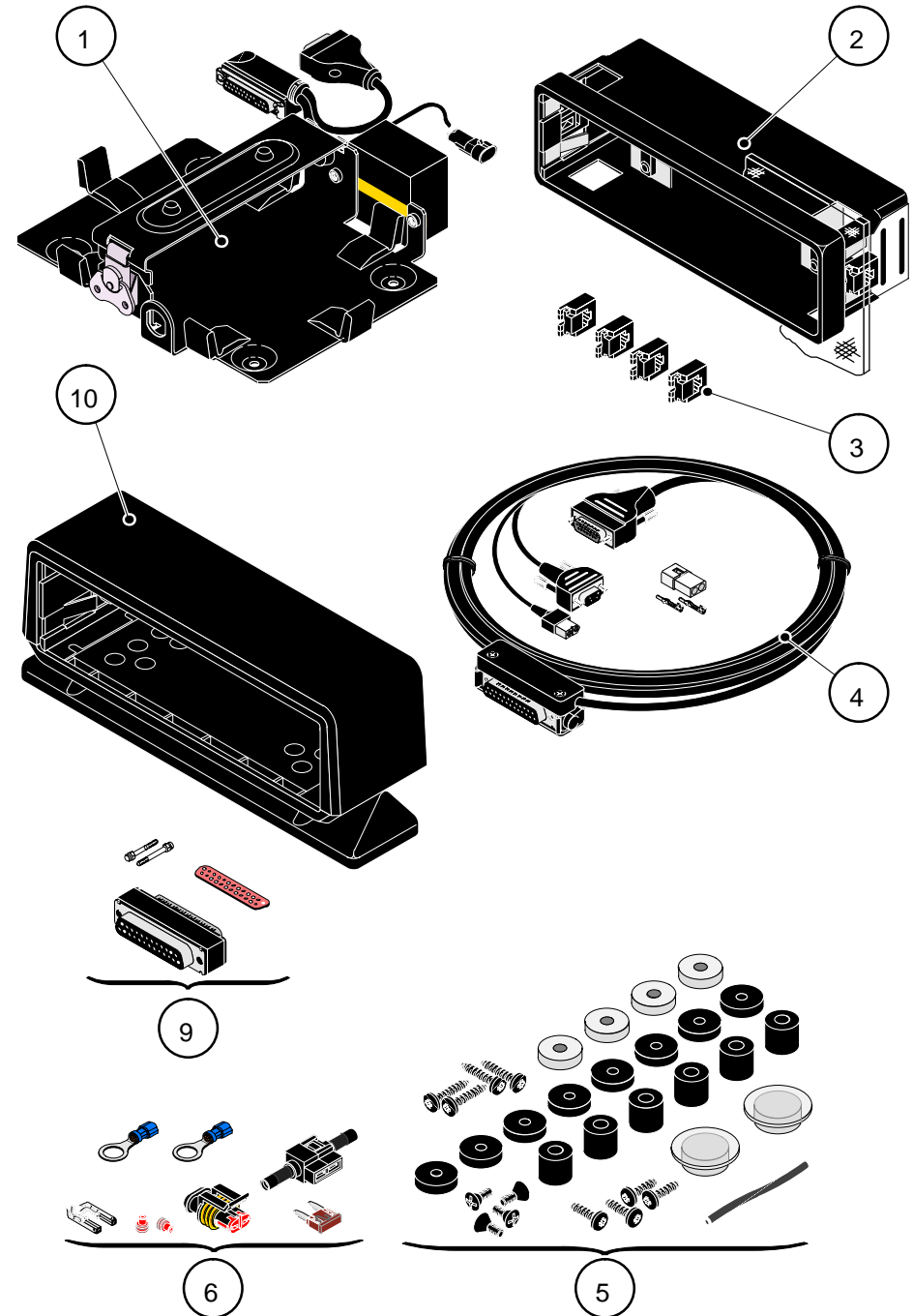
- 1 – Support BER version B équipé
- 2 – Support DIN auto (kit HT1108A)
- 3 – Kit fixation console
- 4 – Kit câble système CCP
- 5 – Kit visserie
- 6 – Kit connectique
- 9 – Adaptateur Sub-D 25 points
- 10 – Support tableau de bord (kit HT1108B)

Leyenda

- 1 – Soporte BER versión B equipado
- 2 – Soporte DIN auto (kit HT1108A)
- 3 – Kit sujeción consola
- 4 – Kit cable sistema CCP
- 5 – Kit de tornillería
- 6 – Kit de conexión
- 9 – Adaptador Sub-D 25 puntos
- 10 – Soporte de tablero de mandos (kit HT1108B)

Legende

- 1 – BER-Träger (Version B)
- 2 – DIN-Autoträger (Kit HT1108A)
- 3 – Konsolenbefestigungskit
- 4 – Systemkabelkit
- 5 – Schraubenkit
- 6 – Anschlusskit
- 9 – 25-poliger Sub-D-Adapter
- 10 – Armaturenbrettträger (Kit HT1108B)



Legend

- 1 – BER transceiver bracket (version B)
- 2 – Car DIN holder (kit HT1108A)
- 3 – Console mounting kit
- 4 – CCP system cable kit
- 5 – Screw kit
- 6 – Connection kit
- 7 – Dashboard holder (kit HT1108B)

Légende

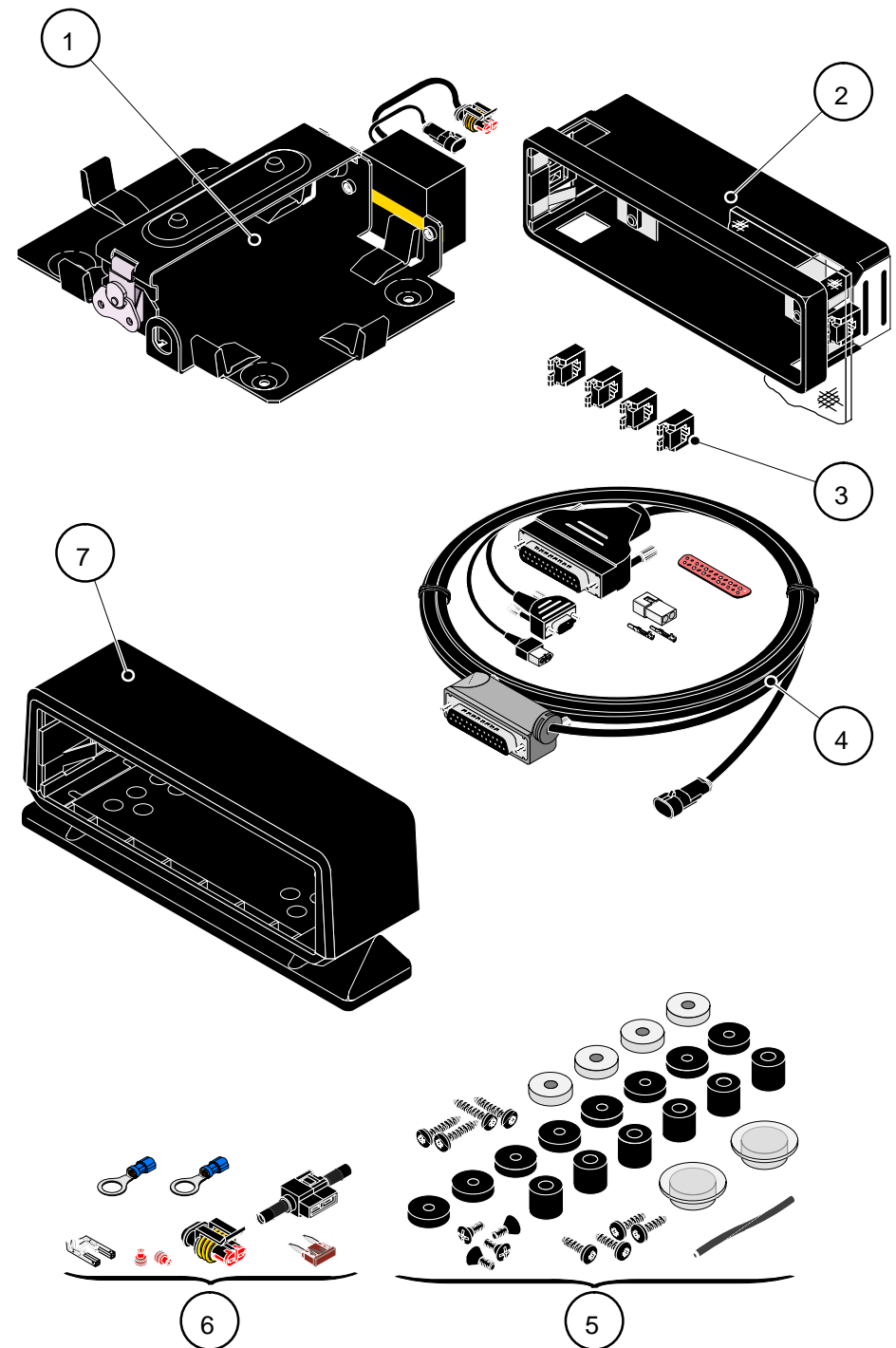
- 1 – Support BER version B
- 2 – Support DIN auto (kit HT1108A)
- 3 – Kit fixation console
- 4 – Kit câble système CCP
- 5 – Kit visserie
- 6 – Kit connectique
- 7 – Support tableau de bord (kit HT1108B)

Leyenda

- 1 – Soporte BER (versión B)
- 2 – Soporte DIN auto (kit HT1108A)
- 3 – Kit sujeción consola
- 4 – Kit cable sistema CCP
- 5 – Kit de tornillería
- 6 – Kit de conexión
- 7 – Soporte de tablero de mandos (kit HT1108B)

Legende

- 1 – BER-Träger (Version B)
- 2 – DIN-Autoträger (Kit HT1108A)
- 3 – Konsolenbefestigungs kit
- 4 – Systemkabelkit
- 5 – Schraubenkit
- 6 – Anschlusskit
- 7 – Armaturenbrettträger (Kit HT1108B)



TR_MCØ_KITAJUTØ3_CCP_PRES_Ø1_Ø2

Legend

- 1 – Packing box
- 2 – Positioning template
- 3 – Loudspeaker
- 4 – Securing screw

Légende

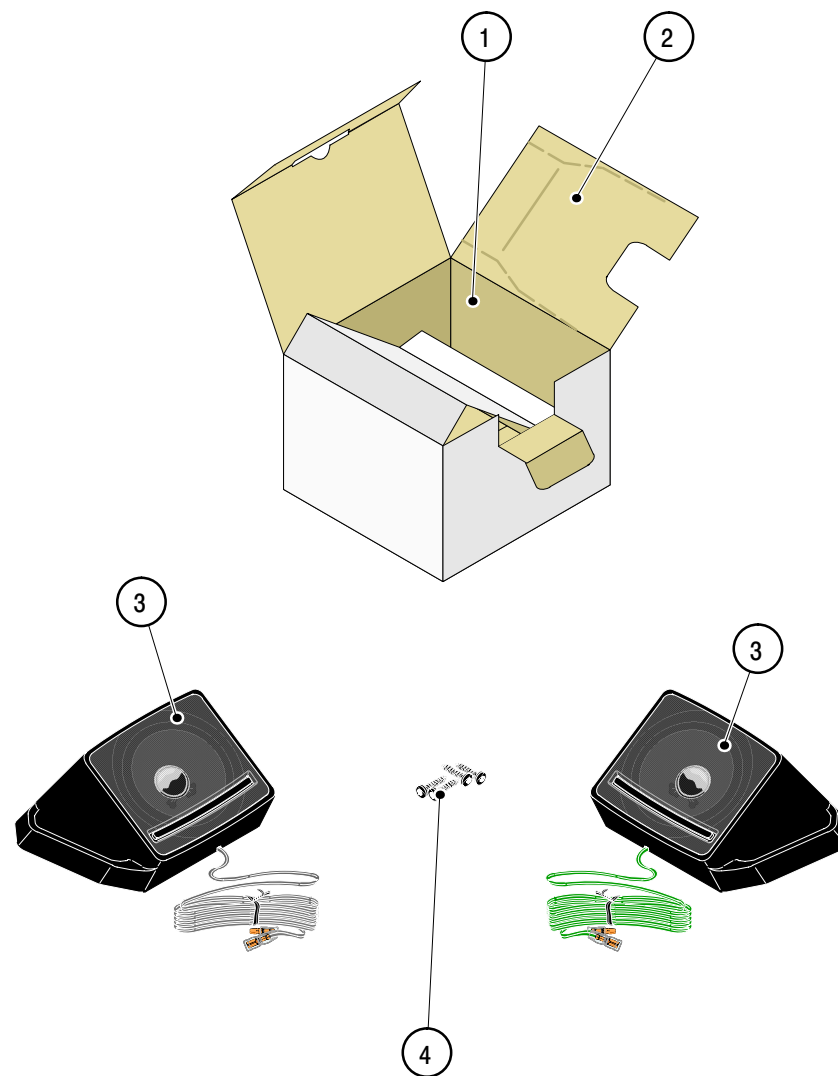
- 1 – Boîte d'emballage
- 2 – Gabarit de positionnement
- 3 – Haut-parleur
- 4 – Vis de fixation

Leyenda

- 1 – Caja de embalaje
- 2 – Plantilla de posicionamiento
- 3 – Altavoz
- 4 – Tornillos de fijación

Legende

- 1 – Verpackungskarton
- 2 – Bohrschablone
- 3 – Lautsprecher
- 4 – Befestigungsschrauben



Legend

- 1 -- -12 V to battery
- 2 -- + 12 V to batter
- 3 -- Smooth area for crimping
- 4 -- 7.5 A fuse
- 5 -- Fuse-holder
- 6 -- Smooth area for crimping
- 7 -- To AMP connector on BER bracket power supply filter
- 8 -- Locking cage
- 9 -- AMP connector
- 10 -- Contacts
- 11 -- Sealing ring
- 12 -- Power supply cable
- 13 -- Molex 2-pin female connector on system cable
- 14 -- Molex 2-pin male connector
- 15 -- Contacts
- 16 -- + 12 V to micro LS
- 17 -- To external micro LS
- 18 -- - 12 V to micro LS

Legenda

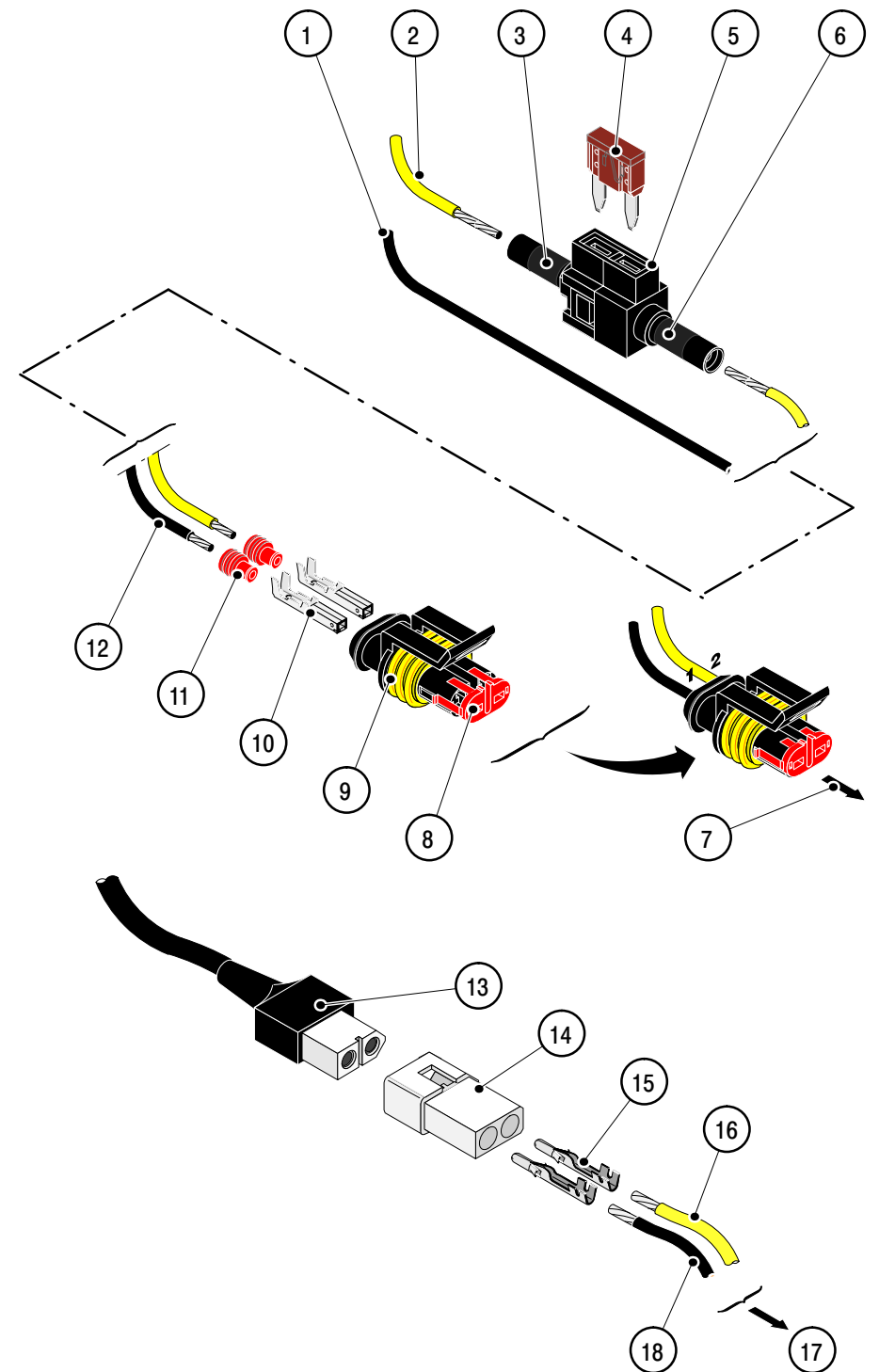
- 1 -- - 12 V hacia batería
- 2 -- + 12 V hacia batería
- 3 -- Zona "mate" para apriete
- 4 -- Fusible 7,5 A
- 5 -- Portafusible
- 6 -- Zona "mate" para apriete
- 7 -- Hacia conector AMP del filtro alim. del soporte BER
- 8 -- Jaula de inmovilización
- 9 -- Conector AMP
- 10 -- Contactos
- 11 -- Anillo de estanqueidad
- 12 -- Cable de alimentación
- 13 -- Conector Molex 2 puntos hembra del cable sistema
- 14 -- Conector Molex 2 puntos macho
- 15 -- Contactos
- 16 -- + 12 V hacia AV
- 17 -- Hacia AV externo
- 18 -- - 12 V hacia AV

Légende

- 1 -- - 12 V vers batterie
- 2 -- + 12 V vers batterie
- 3 -- Zone "mate" pour sertissage
- 4 -- Fusible 7,5 A
- 5 -- Porte fusible
- 6 -- Zone "mate" pour sertissage
- 7 -- Vers connecteur AMP du filtre alim. du support BER
- 8 -- Cage de verrouillage
- 9 -- Connecteur AMP
- 10 -- Contacts
- 11 -- Bague d'étanchéité
- 12 -- Câble d'alimentation
- 13 -- Connecteur Molex 2 points femelle du câble système
- 14 -- Connecteur Molex 2 points mâle
- 15 -- Contacts
- 16 -- + 12 V vers HP
- 17 -- Vers HP externe
- 18 -- - 12 V vers HP

Legende

- 1 -- - 12 V zur Batterie
- 2 -- + 12 V zur Batterie
- 3 -- "Matter" Bereich für Quetschung
- 4 -- Sicherung 7,5 A
- 5 -- Sicherungshalter
- 6 -- "Matter" Bereich für Quetschung
- 7 -- Zum Anschluss AMP des Stromvers.-filters des BER-Trägers
- 8 -- Verriegelungskäfig
- 9 -- Anschluss AMP
- 10 -- Kontakte
- 11 -- Dichtring
- 12 -- Stromversorgungskabel
- 13 -- 2-poliger weiblicher Molex-Stecker des Systemkabels
- 14 -- 2-poliger männlicher Molex-Stecker
- 15 -- Kontakte
- 16 -- + 12 V zum LS
- 17 -- Zum externen LS
- 18 -- - 12 V zum LS



TR_MCS ALIM_VERSB_MONT_02_01

TR_MCS HP_VERSB_MONT_02_01

Legend

- 1 – System cable Sub-D 15-pin male connector
- 2 – BER bracket Sub-D 15-pin female connector
- 3 – BER bracket 2-pin AMP male connector
- 4 – Power supply cable 2-pin APM female connector
- 5 – 10 mm. dia. attachment hole and boss
- 6 – BER bracket HR1348
- 7 – System cable 2-pin APM male connector
- 8 – BER bracket 2-pin female connector
- 9 – BER bracket 2-pin AMP male connector
- 0 – BER bracket HR6237
- 11 – Positioning washer (if required)
- 2 – Threaded shaft

Legenda

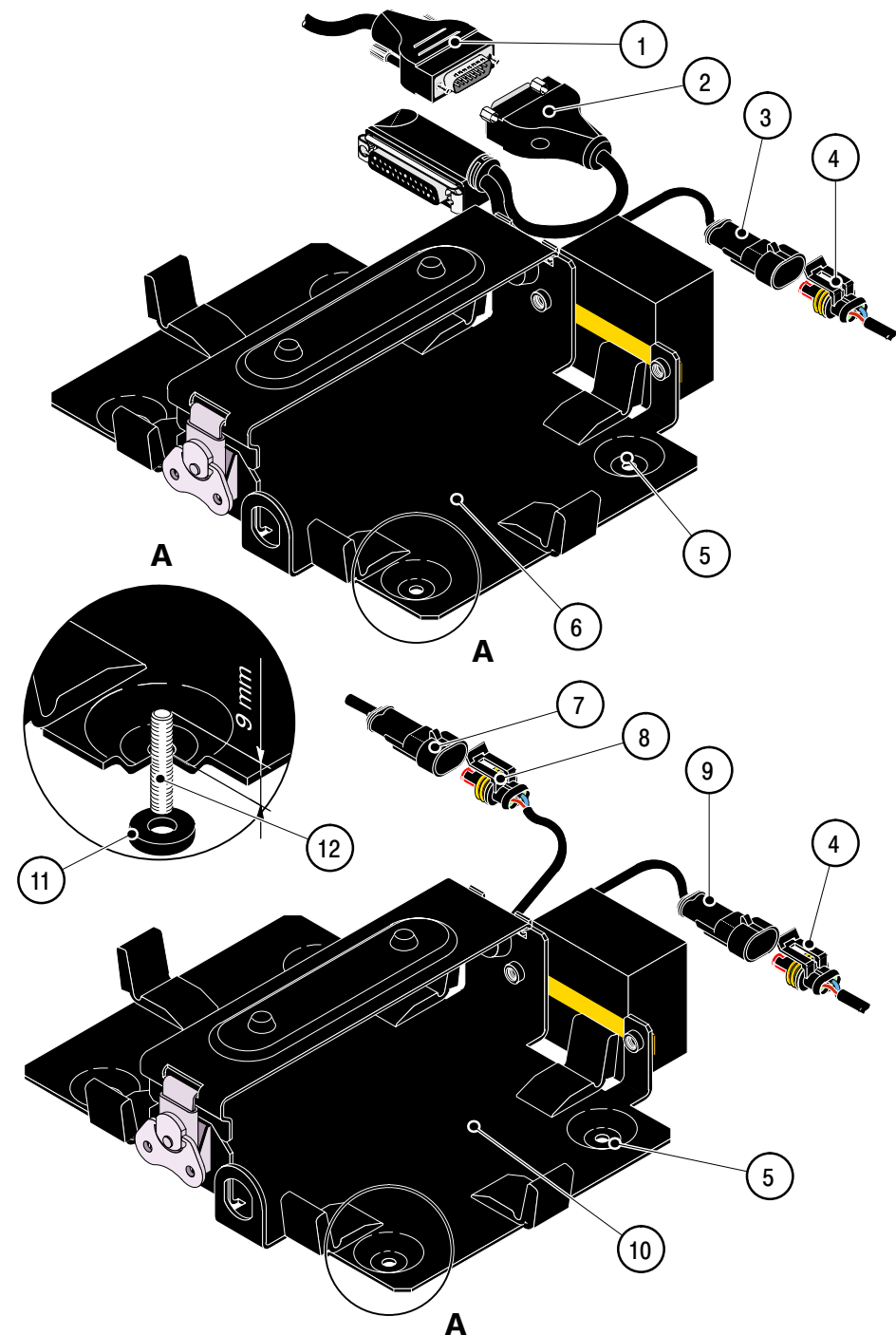
- 1 – Conector Sub-D 15 puntos macho del cable sistema
- 2 – Conector Sub-D 15 puntos hembra del soporte BER
- 3 – Conector AMP 2 puntos macho del soporte BER
- 4 – Conector APM 2 puntos hembra del cable de alimentación
- 5 – Orificios de sujeción Ø 10 y resaltes
- 6 – Soporte BER HR1348
- 7 – Conector APM 2 puntos macho del cable sistema
- 8 – Conector APM 2 puntos hembra del soporte BER
- 9 – Conector AMP 2 puntos macho del soporte BER
- 0 – Soporte BER HR6237
- 11 – Arandela de posicionamiento (en caso de necesidad)
- 2 – Varilla roscada

Légende

- 1 – Connecteur Sub-D 15 points mâle du câble système
- 2 – Connecteur Sub-D 15 points femelle du support BER
- 3 – Connecteur AMP 2 points mâle du support BER
- 4 – Connecteur APM 2 points femelle du câble alimentation
- 5 – Trous de fixation Ø 10 et bossage
- 6 – Support BER HR1348
- 7 – Connecteur APM 2 points mâle du câble système
- 8 – Connecteur APM 2 points femelle du support BER
- 9 – Connecteur AMP 2 points mâle du support BER
- 0 – Support BER HR6237
- 11 – Rondelle de positionnement (si nécessaire)
- 2 – Tige filetée

Legende

- 1 – 15-poliger männlicher Sub-D-Stecker des Systemkabels
- 2 – 15-poliger weiblicher Sub-D Stecker des BER-Trägers
- 3 – 2-poliger männlicher AMP-Stecker des BER-Trägers
- 4 – 2-poliger weiblicher APM-Stecker des Stromversorgungskabels
- 5 – Vertiefte Befestigungslöcher Ø 10
- 6 – BER-Träger HR1348
- 7 – 2-poliger männlicher APM-Stecker des Systemkabels
- 8 – 2-poliger weiblicher APM-Stecker des BER-Trägers
- 9 – 2-poliger männlicher AMP-Stecker des BER-Trägers
- 0 – BER-Träger HR6237
- 11 – Positionierungsscheibe (falls notwendig)
- 2 – Gewindestange



TR_MCØ_TRL_SUPBERB_INST_02_02

Legend

- 1 – Radio BER version B (RA1585 or RA1621)
- 2 – Sub-D 25-pin male operating connector
- 3 – Wide band radio BER version B (RA1634, RA1635, RA 1636 or RA1637)
- 4 – Gasket
- 5 – gasket
- 6 – Sub-D 25-pin adapter (in kit HT1108A or HT1108B)
- 7 – Spacers (in kit HT1108A or HT1108B)

Légende

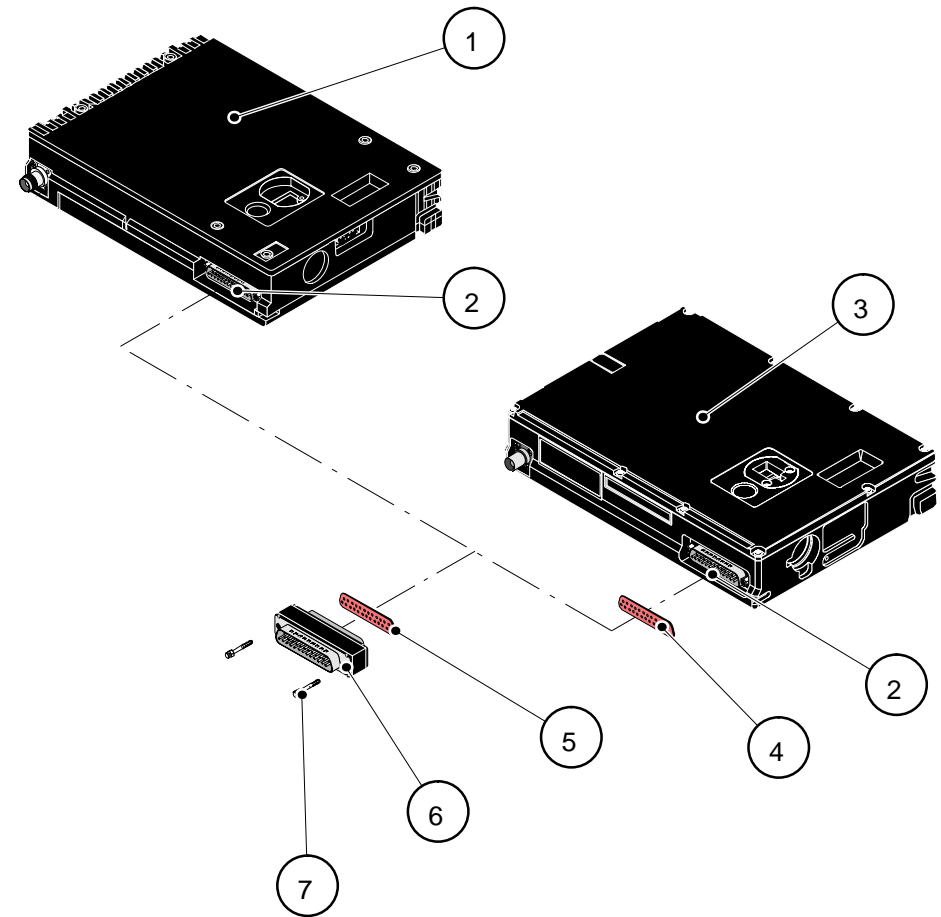
- 1 – BER radio version B (RA1585 ou RA1621)
- 2 – Connecteur exploitation Sub-D 25 points mâle
- 3 – BER radio large bande version B (RA1634, RA1635, RA 1636 ou RA1637)
- 4 – Joint d'étanchéité
- 5 – Joint d'étanchéité
- 6 – Adaptateur Sub-D 25 points (dans kit HT1108A ou HT1108B)
- 7 – Entretoises (dans kit HT1108A ou HT1108B)

Leyenda

- 1 – BER radio versión B (RA1585 o RA1621)
- 2 – Conector de operación Sub-D 25 puntos macho
- 3 – BER radio banda extendida versión B (RA1634, RA1635, RA 1636 o RA1637)
- 4 – Junta de estanqueidad
- 5 – Junta de estanqueidad
- 6 – Adaptador Sub-D 25 puntos (en kit HT1108A o HT1108B)
- 7 – Separadores (en kit HT1108A o HT1108B)

Legende

- 1 – Funk-BER Version B (RA1585 oder RA1621)
- 2 – 25-poliger männlicher Sub-D Betriebs-Steckanschluss
- 3 – Breitband Funk-BER Version B (RA1634, RA1635, RA 1636 oder RA1637)
- 4 – Dichtung
- 5 – Dichtung
- 6 – 25-poliges Sub-D Adapter (in Kit HT1108A oder HT1108B)
- 7 – Schrauben (in Kit HT1108A oder HT1108B)



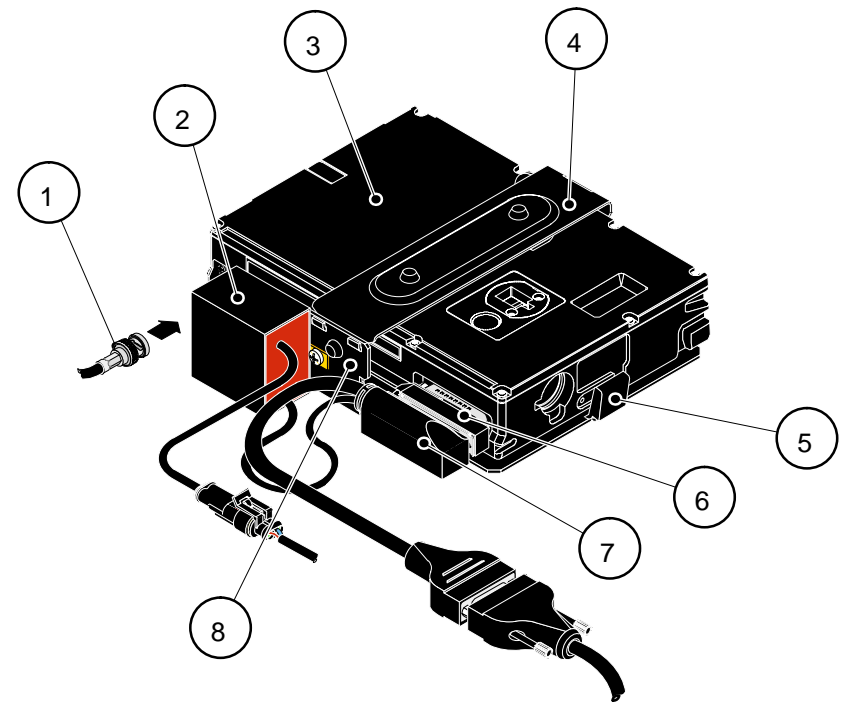
TR_MC2_BERB_BERBLB_PREPA_01_01

Legend

- 1 –Antennacable connector
- 2 –Power supply filter
- 3 –BER
- 4 –Maintaining flange
- 5 –BER bracket lugs
- 6 –Sub–D 25–pin adapter
- 7 –BER bracket Sub–D 25–pin female connector
- 8 –BER bracket – HR1348
- 9 –System cable Sub–D 25–pin connector
- 10 –BER bracket – HR6237

Légende

- 1 – Connecteur du câble antenne
- 2 – Filtre alimentation
- 3 – BER
- 4 – Bride de maintien
- 5 – Pattes du support BER
- 6 – Adaptateur Sub–D 25 points
- 7 – Connecteur Sub–D 25 points femelle du support BER
- 8 – Support BER – HR1348
- 9 – Connecteur Sub–D 25 points du câble système
- 10 – Support BER – HR6237

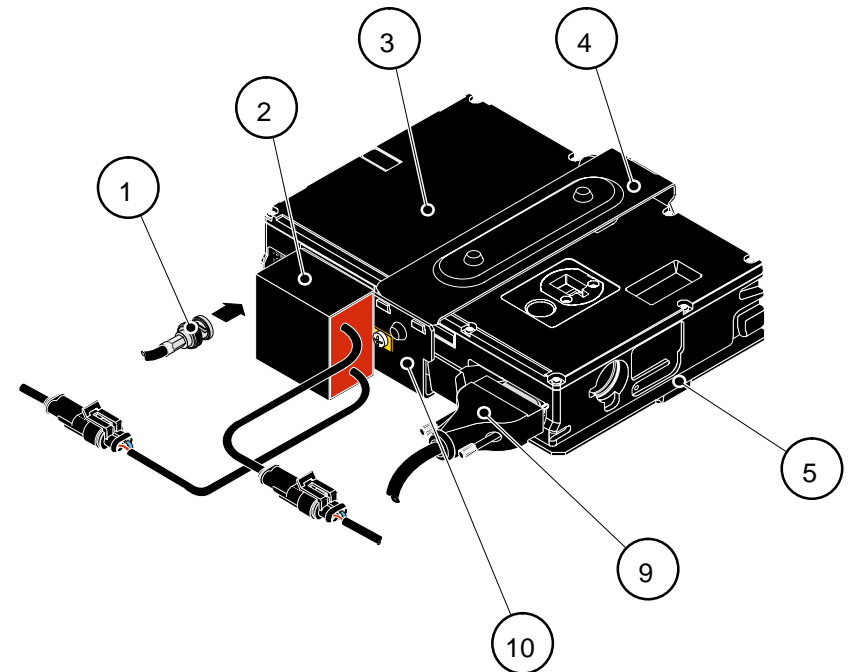


Leyenda

- 1 – Conector del cable antena
- 2 – Filtro alimentación
- 3 – BER
- 4 – Brida de sujeción
- 5 – Patas del soporte BER
- 6 – Adaptador Sub–D 25 puntos
- 7 – Conector Sub–D 25 puntos hembra del soporte BER
- 8 – Soporte BER – HR1348
- 9 – Conector Sub–D 25 puntos del cable sistema
- 10 – Soporte BER – HR6237

Legende

- 1 – Stecker des Antennenkabels
- 2 – Stromfilter
- 3 – BER
- 4 – Haltebügel
- 5 – Laschen des BER–Trägers
- 6 – 25–poliges Sub–D Adapter
- 7 – 25–poliger weiblicher Sub–D Stecker des BER–Trägers
- 8 – BER–Träger – HR1348
- 9 – 25–poliger Sub–D Stecker des Systemkabels
- 10 – BER–Träger – HR6237

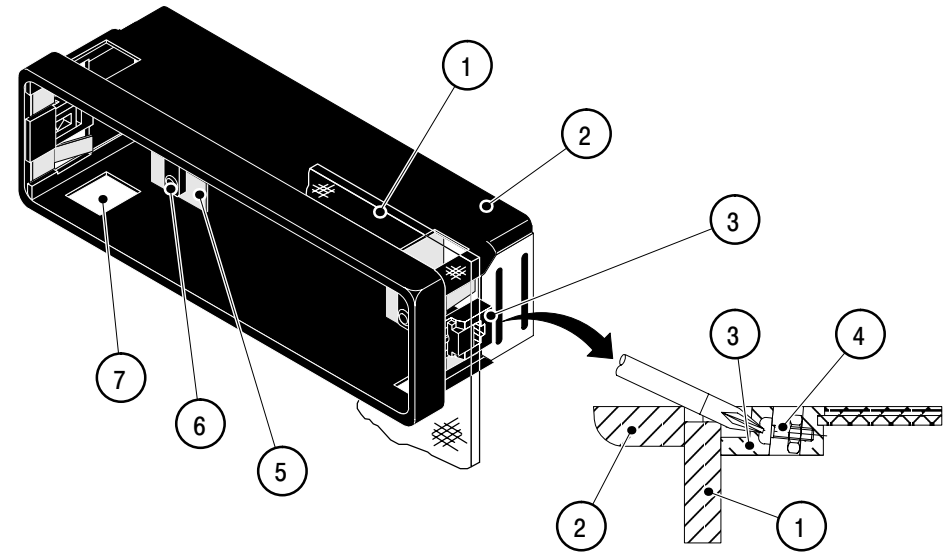


Legend

- 1 – Car radio housing
- 2 – Car DIN holder
- 3 – Fastener
- 4 – Screw
- 5 – Metal stop
- 6 – Damping pad
- 7 – Slots for fasteners
- 8 – Securing screw
- 9 – Dashboard holder
- 10 – System cable connector
- 11 – Cable guide ring

Légende

- 1 – Logement auto-rádio
- 2 – Support DIN auto
- 3 – Agrafes
- 4 – Vis
- 5 – Butée métallique
- 6 – Patin amortisseur
- 7 – Encoches pour agrafes
- 8 – Vis de fixation
- 9 – Support tableau de bord
- 10 – Connecteur du câble système
- 11 – Bague guide câble



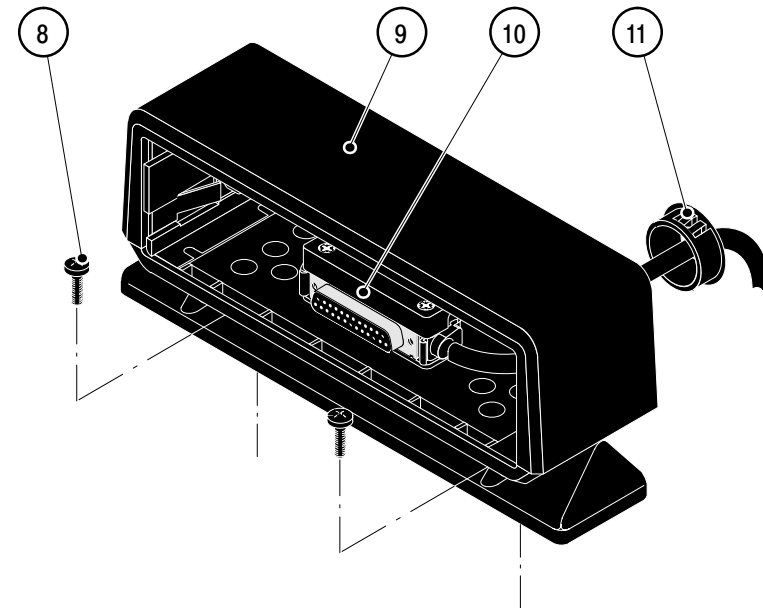
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Leyenda

- 1 – Alojamiento auto-rádio
- 2 – Soporte DIN auto
- 3 – Grapas
- 4 – Tornillos
- 5 – Tope metálico
- 6 – Patín amortiguador
- 7 – Muecas para grapas
- 8 – Tornillo de sujeción
- 9 – Soporte de tablero de mandos
- 10 – Conector del cable sistema
- 11 – Anillo guía del cable

Legende

- 1 – Autoradio-Einbaustelle
- 2 – DIN-Autoträger
- 3 – Klammern
- 4 – Schraube
- 5 – Metallanschlag
- 6 – Dämpfungsgummi
- 7 – Aussparungen für Klammern
- 8 – Befestigungsschrauben
- 9 – Armaturenbrettträger
- 10 – Systemkabelstecker
- 11 – Kabelführungsring



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Legend

- 1 – Extraction tool
- 2 – Speaker microphone
- 3 – Speaker microphone connector
- 4 – CCP
- 5 – CCP car DIN holder
- 6 – Sub-D 25-pin female system cable connector
- 7 – Speaker microphone holder
- 8 – Speaker microphone holder securing screws

Légende

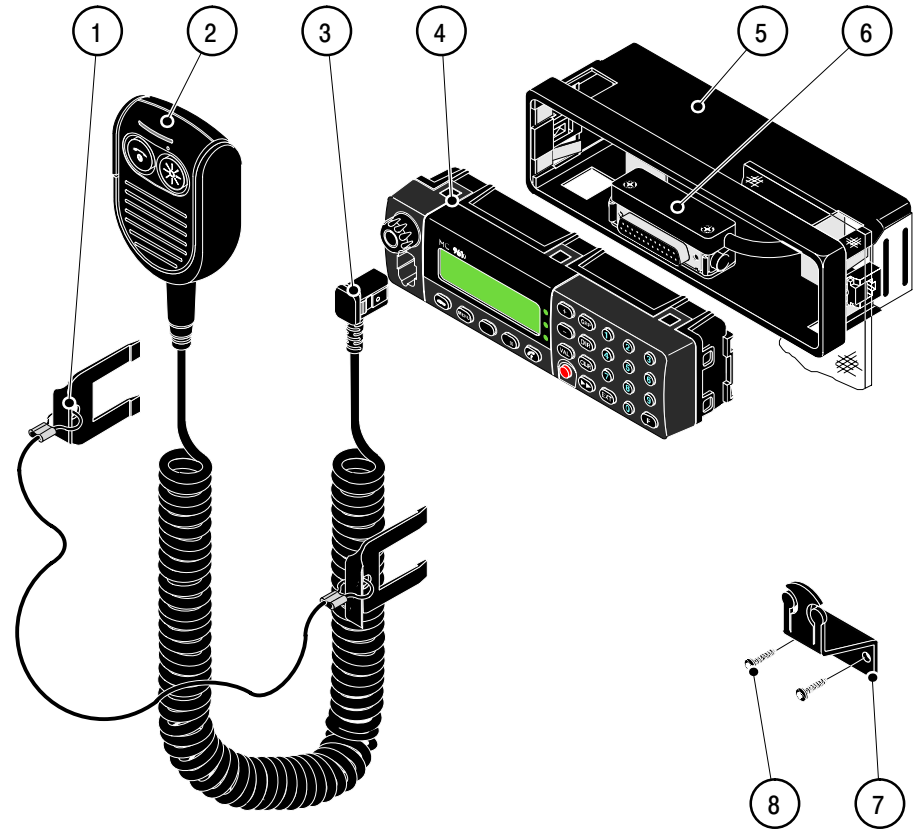
- 1 – Clé d'extraction
- 2 – Micro HP
- 3 – Connecteur du câble du micro HP
- 4 – CCP
- 5 – Support DIN auto
- 6 – Connecteur Sub-D 25 points femelle du câble système
- 7 – Support micro HP
- 8 – Vis pour support micro HP

Leyenda

- 1 – Llave de extracción
- 2 – Micrófono AV
- 3 – Conector del cable del micrófono AV
- 4 – CCP
- 5 – Soporte DIN auto
- 6 – Conector Sub-D 25 puntos hembra del cable sistema
- 7 – Soporte micrófono AV
- 8 – Tornillo para soporte micrófono AV

Legende

- 1 – Auszieher
- 2 – LS-Mikrofon
- 3 – Stecker des LS-Mikrofonkabels
- 4 – CCP
- 5 – DIN-Autoträger
- 6 – 25-poliger weiblicher Sub-D-Stecker des Systemkabels
- 7 – LS-Mikrofonträger
- 8 – Schrauben für LS-Mikrofonträger



Legend

- 1 – Loudspeaker
- 2 – Push-to-talk
- 3 – Microphone
- 4 – Transmit LED indicator
- 5 – On/Off button
- 6 – Display
- 7 – Keypad

Légende

- 1 – Haut-parleur
- 2 – Alternat
- 3 – Micro
- 4 – Témoin d'émission
- 5 – Bouton Marche/Arrêt
- 6 – Afficheur
- 7 – Clavier

Leyenda

- 1 – Altavoz
- 2 – Alternado
- 3 – Micrófono
- 4 – Indicador de emisión
- 5 – Botón de marcha/parada
- 6 – Visualizador
- 7 – Teclado

Legende

- 1 – Lautsprecher
- 2 – Sprechtaete
- 3 – Mikrofon
- 4 – Anzeigeleuchte Senden
- 5 – Ein-/Aus-Taste
- 6 – Display
- 7 – Tastatur

