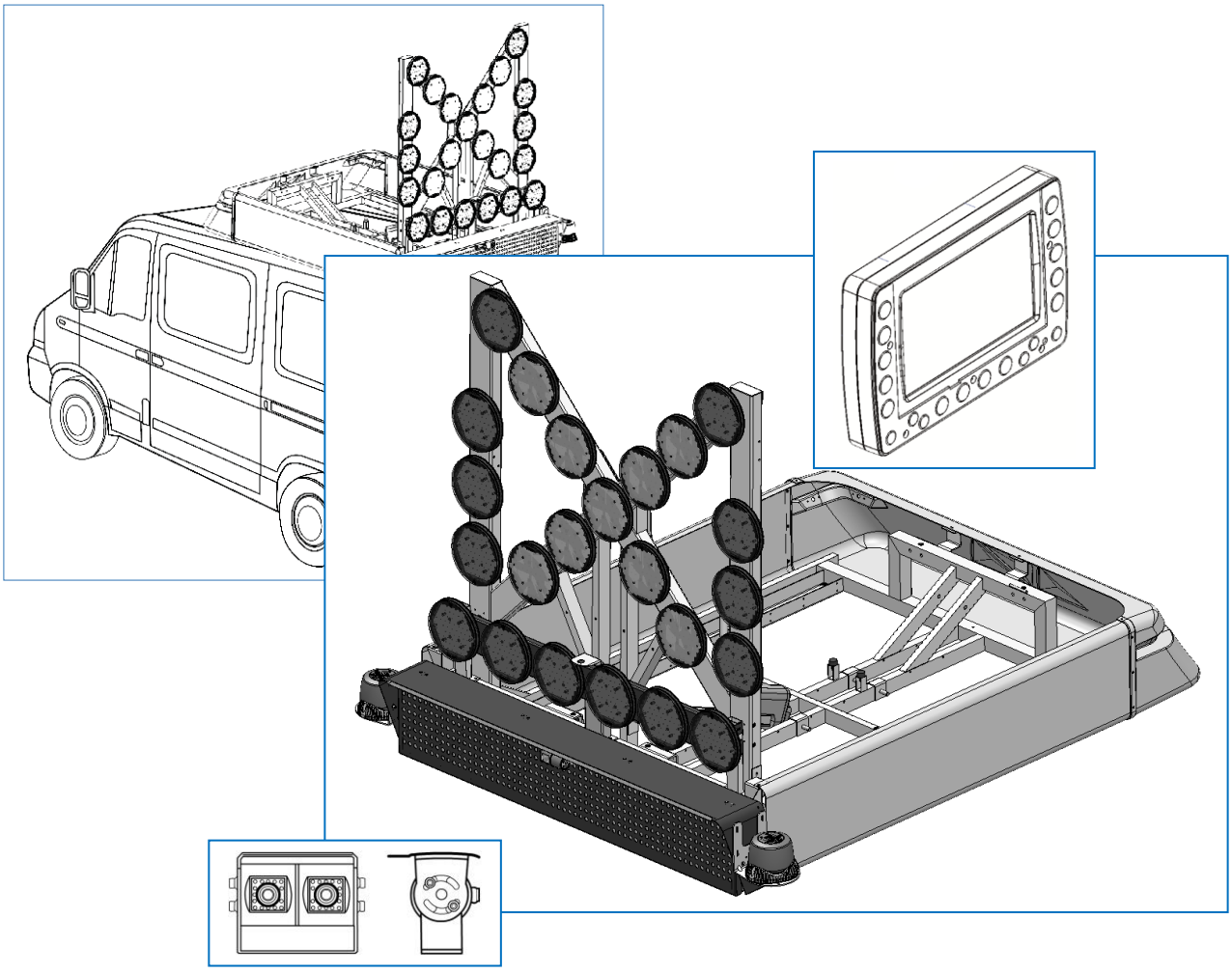
MERCURA
Standby Group

TECHNICAL MANUAL
ZENO FLU SERIE 200 ROOF ASSEMBLY



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SAS with capital 102.400 € - APE (NAF) 2790 Z – SIRET 310 999 891 00040

1. SUMMARY

2. WARNINGS

LIMITS OF LIABILITY

The products have been developed in accordance with standards and regulations in force. The information gathered in the technical documentation takes into account the state of the art as well as the knowledge and experience acquired over many years.

MERCURA is not responsible for damages and consequences due to:

- Non-compliance with the information provided by the product documentation
- Non-compliant use of the product
- The mounting and application of products made by unskilled personnel
- Unauthorized changes made by the user or the operator on their own
- Technical modifications not submitted to or approved by MERCURA
- Use of spare parts not approved by MERCURA

Pièces d'usure non couvertes par la garantie contractuelle :

- Hinges
- Joints
- Butées
- Vérins
- Axes
- Chapes si non solidaire du vérin

RESPONSIBILITIES OF THE INSTALLER

The installer is fully responsible for the mounting of equipment on a vehicle.

The installer must define the means and the material necessary for mounting of equipment in order to deliver the vehicle equipped according to the regulations.

MERCURA is not responsible for failures occurring due to incorrect definition of the type of mounting system, reinforcements, drilling holes in roof panel, state and quality of mounting system, use of vehicle manufacturer anchoring points and the system power supply and protection definition in accordance with the vehicle energy source.

RESPONSIBILITIES OF THE USER

MERCURA products are professional equipment that must be used for this purpose only. Their implementation is subject to legal obligations in terms of safety at work to which the user must submit. The same applies to safety and accident prevention regulations as well as environmental protection rules. The use of this equipment on the road is subject to compliance with traffic laws and regulations.

Obligations of the user:

- To keep up to date with the regulations in force concerning the safety at work
- To conduct a risk analysis of specific work conditions at the site of intervention
- To adapt user training to regulations, standards and conditions of use
- When using the equipment to check regularly the adequacy of the rules of implementation with the safety rules and standards in force
- To ensure that operators have read and understood the equipment user manual.
- To ensure that users are regularly trained in the use and informed of the hazards associated with the implementation of the equipment.
- To provide personnel with protective equipment adapted to the intervention and to ensure their use.

It is the responsibility of the user:

- To ensure the curative and preventive maintenance of equipment
- To ensure that safety devices are regularly checked

CUSTOMER SERVICE

For any technical information, the MERCURA CUSTOMER SERVICE is at your disposal:

- Website: http://www.mercura.fr/ technical assistance section
- Email : support@mercura.fr
- Phone number: +33 (0)2.54.702.702

Our service is available from Monday to Friday
from 08.30 a.m. to 12 and from 1.30 p.m. to 5 p.m. (Friday until 4 p.m.).

In the spirit of continuous improvement, our staff is at your disposal for any question you might have concerning the installation and the use of our products.

3. GENERALITIES

3.1. INTRODUCTION

The MERCURA ZENO 200 Series Shrouded Units Technical Manual is intended to provide the necessary technical information for the technical services in charge of the installation and maintenance of this signalling equipment.

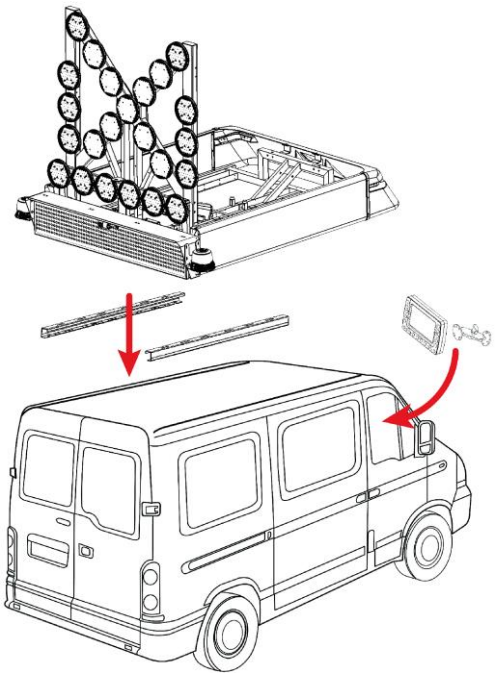
3.2. REGULATORY BASES

The mercura assembly has been designed in accordance with the following regulatory requirements:

- Standard XP P 98-573: Vertical road signs - Mobile variable signalling equipment - General characteristics.
- Standard NF EN 12352: Traffic regulation equipment - Beacons and warning lights - Traffic regulation equipment.
- Interministerial Instruction on Road Signs and Signals :
  - Part 8: Temporary signs
  - Part 9: Dynamic signage
- United Nations Regulation No. 65: Uniform provisions concerning the approval of special warning lamps for motor vehicles.
- United Nations Regulation No. 10 concerning the adoption of uniform technical prescriptions for wheeled vehicles, equipment and parts which can be fitted to and/or be used on wheeled vehicles and the reciprocal conditions for approvals granted on the basis of these prescriptions.

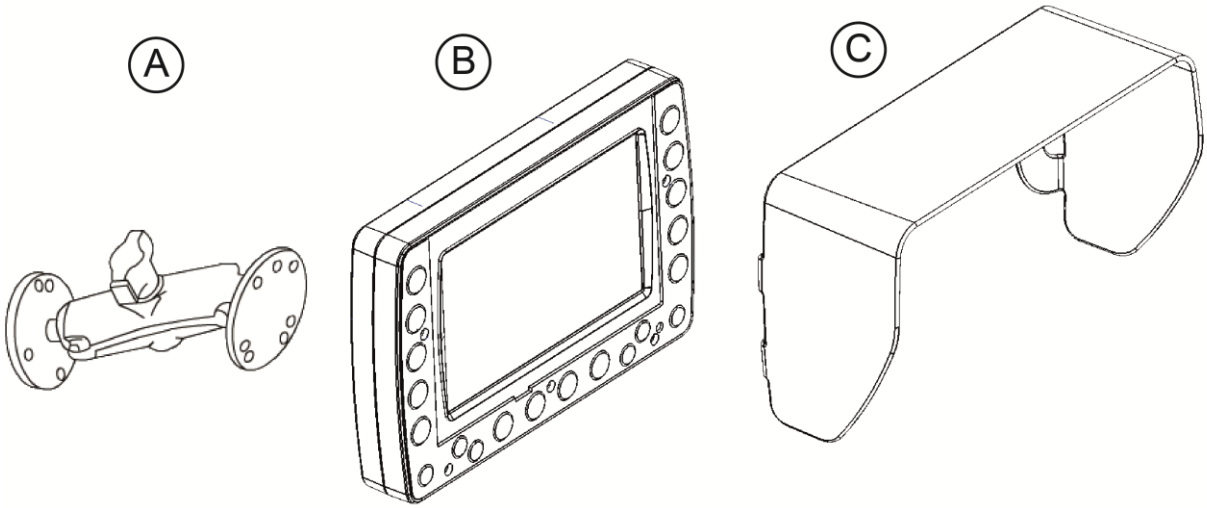
3.3. TECHNICAL DESCRIPTION

The ZENO 200 series is a combined signalling unit equipped with a 43 arrow, a PMV 200mm displaying messages of 10 characters and up to 12 in compressed mode. The equipment is controlled in the cab by means of a touch screen graphic control box. 2 GYROLEDs complete the installation.

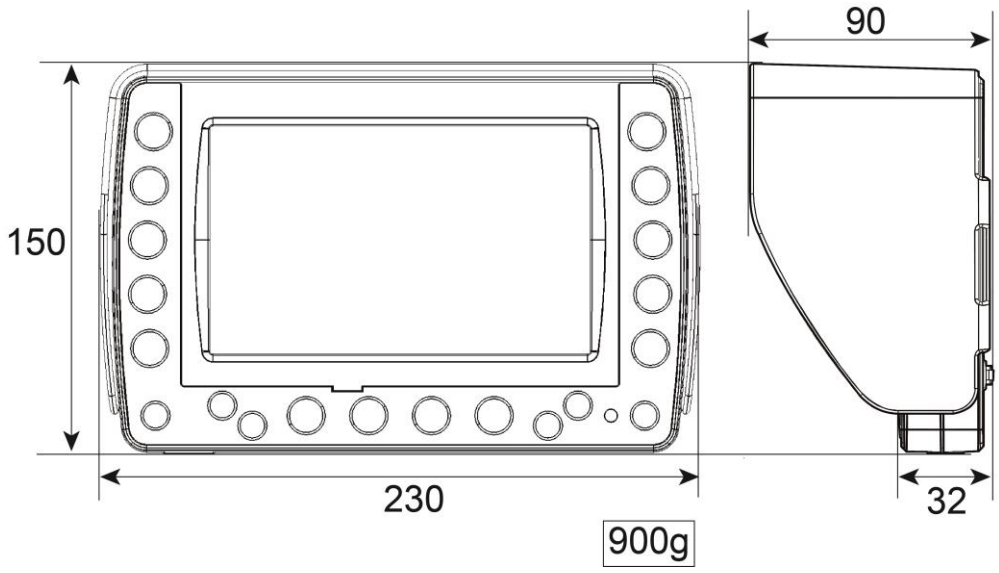


- Supply voltage: 12 volts or 24 volts
- Consumption of recorded elements
  - Day mode: 11.5A at 13.5V / 5.5A at 27V
  - Night mode: 5.31A at 13.5V / 2.73A at 27V

3.3.1. XXL TOUCH-SENSITIVE GRAPHIC CONTROL PANEL

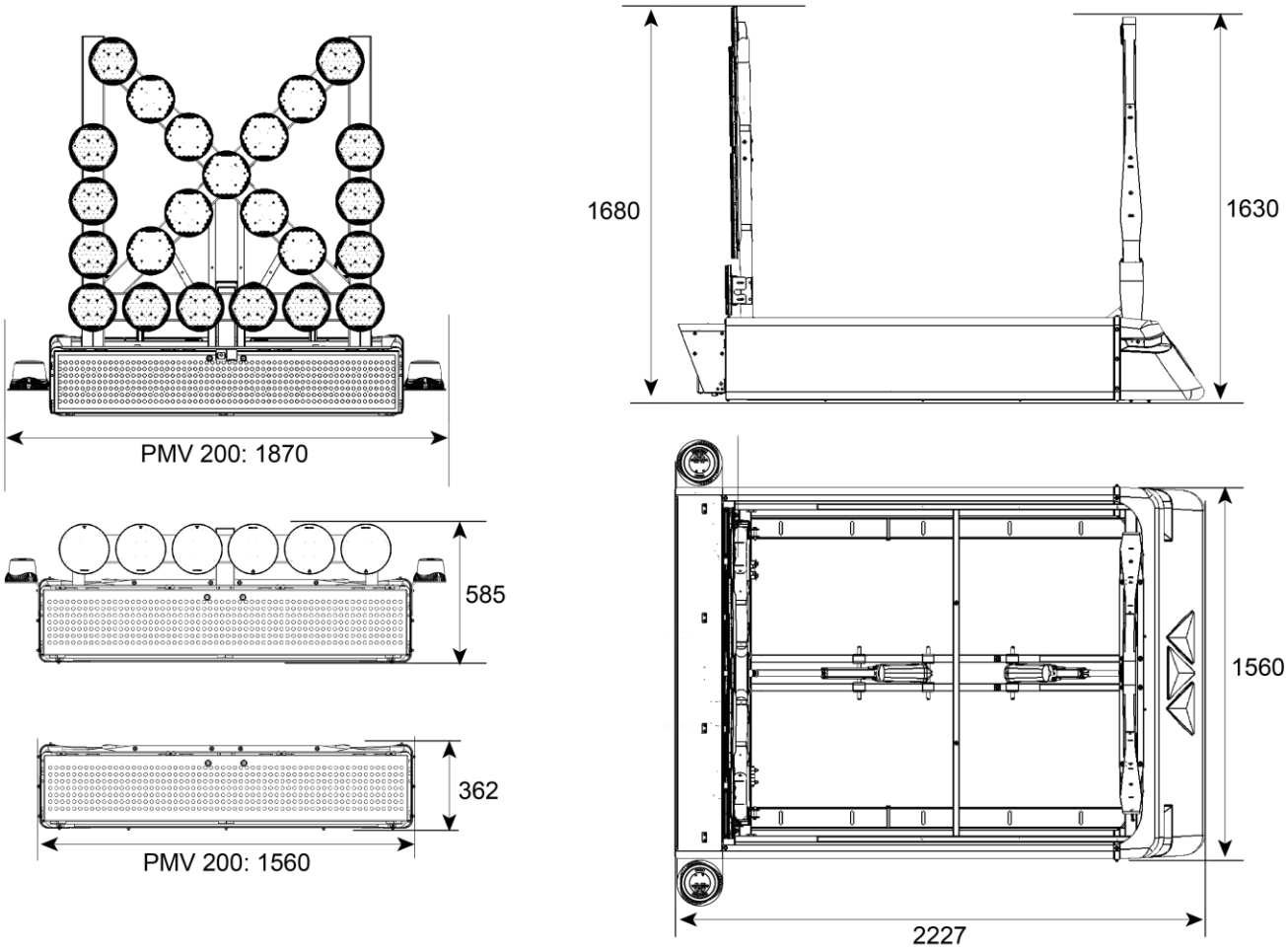


A. Articulated support
B. XXL touch-sensitive graphic control panel
C. Protective cap



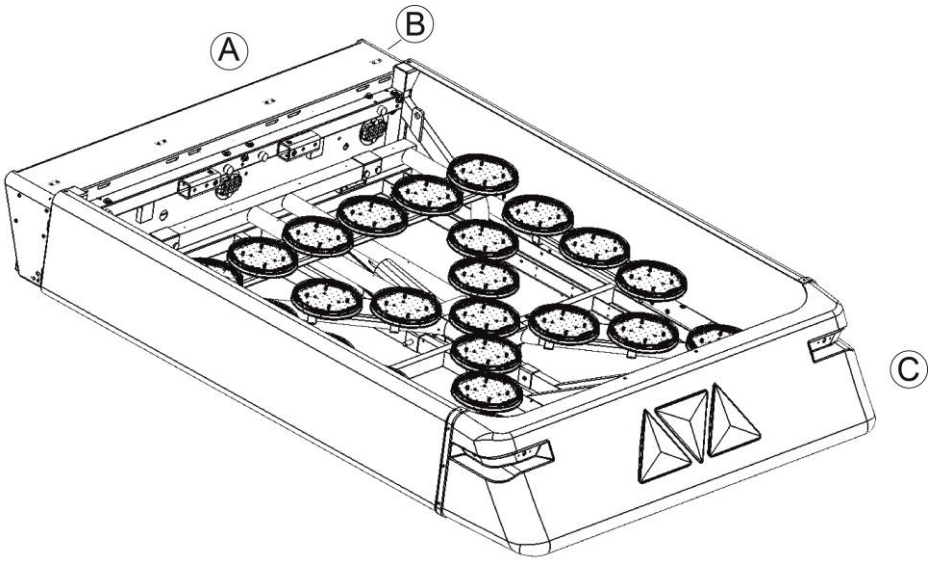
- 7" (152x91) touch screen display
- 800x480 resolution
- 256,000 colours
- 60° viewing angle
- Operating temperature: -20°C / +70°C

3.3.2. CHASSIS



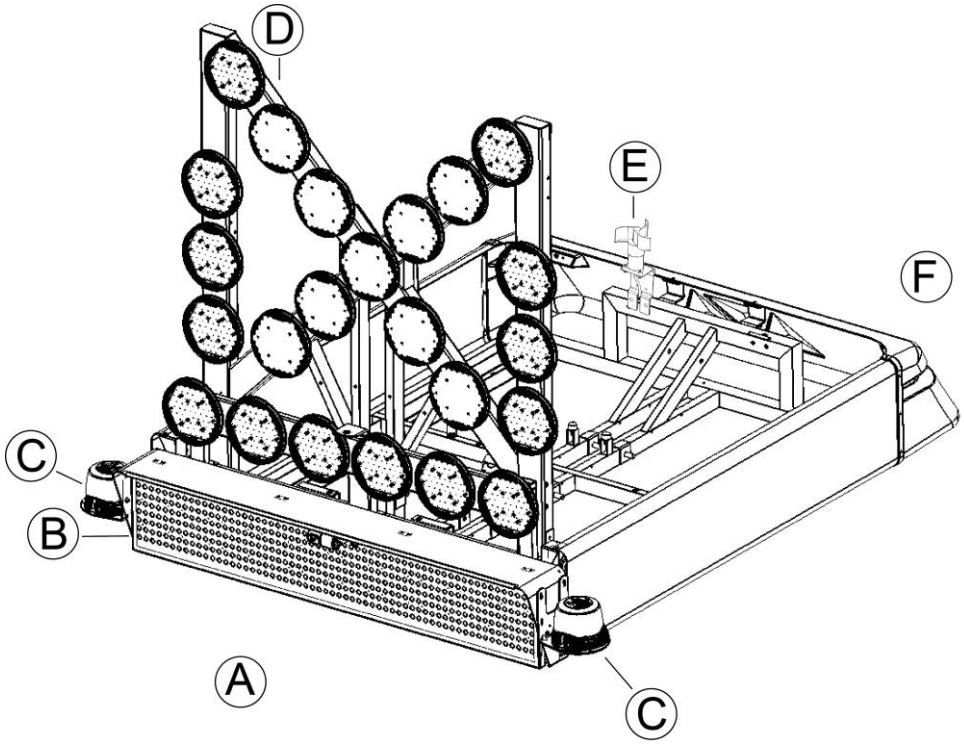
Weight: approx. 100 kg (depending on options)

3.3.2.1. FOLDED ASSEMBLY

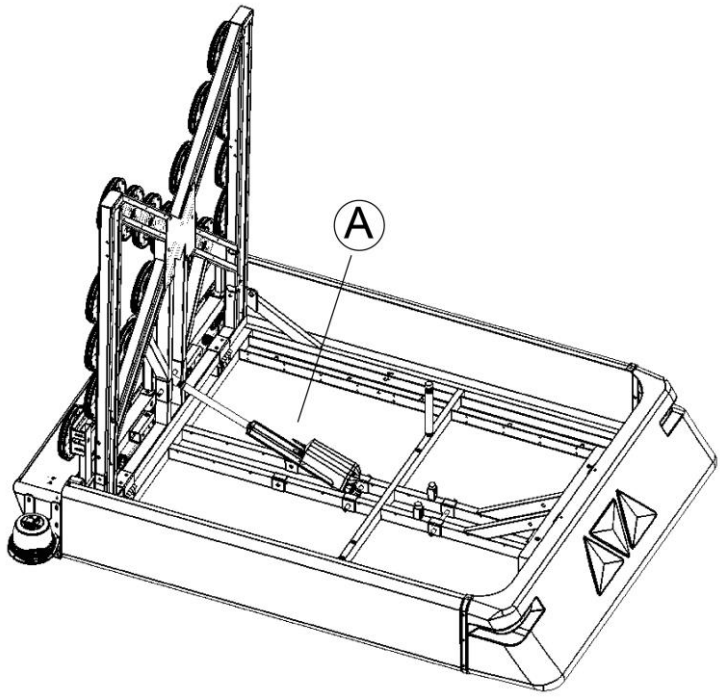


A. Rear of the assembly
B. Box PMV 200 mm
C. Front of the assembly

3.3.2.2. UNFOLDED ASSEMBLY

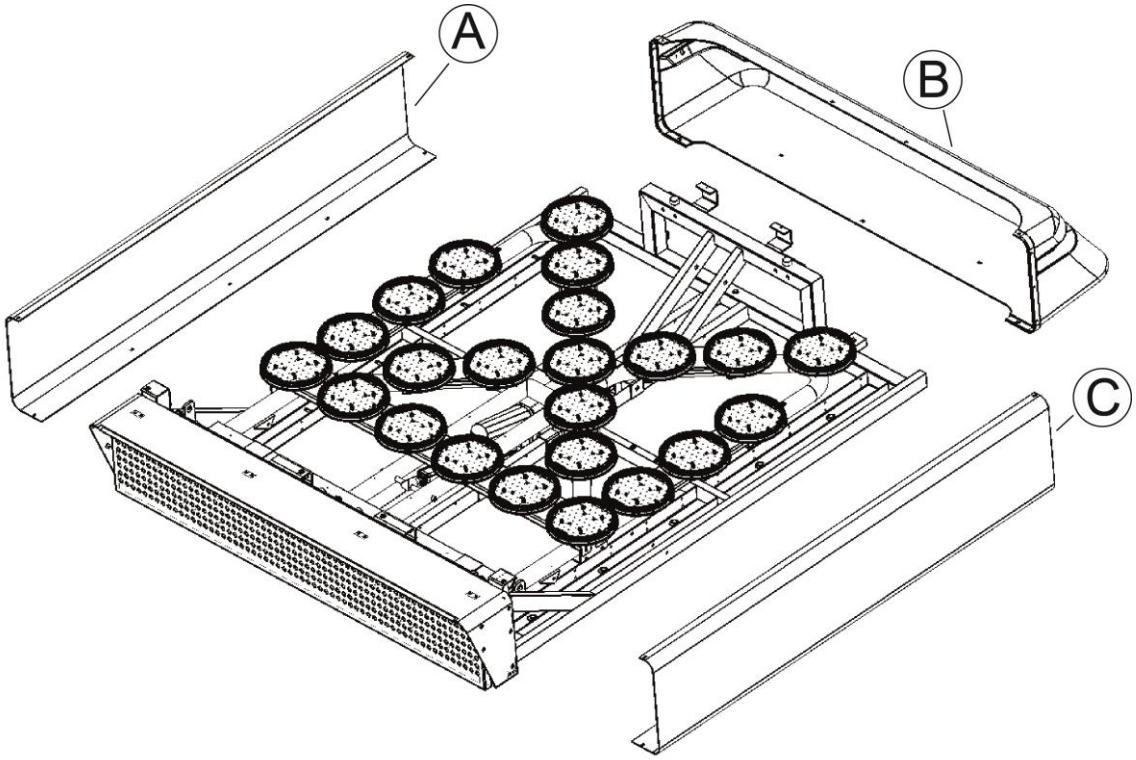


A. Rear of the assembly
B. PMV 200mm 10 character box and up to 12 in compressed mode
C. Gyroled
D. Arrow 23 lights KR43
E. Anemometer (optional)
F. Front of the keel assembly



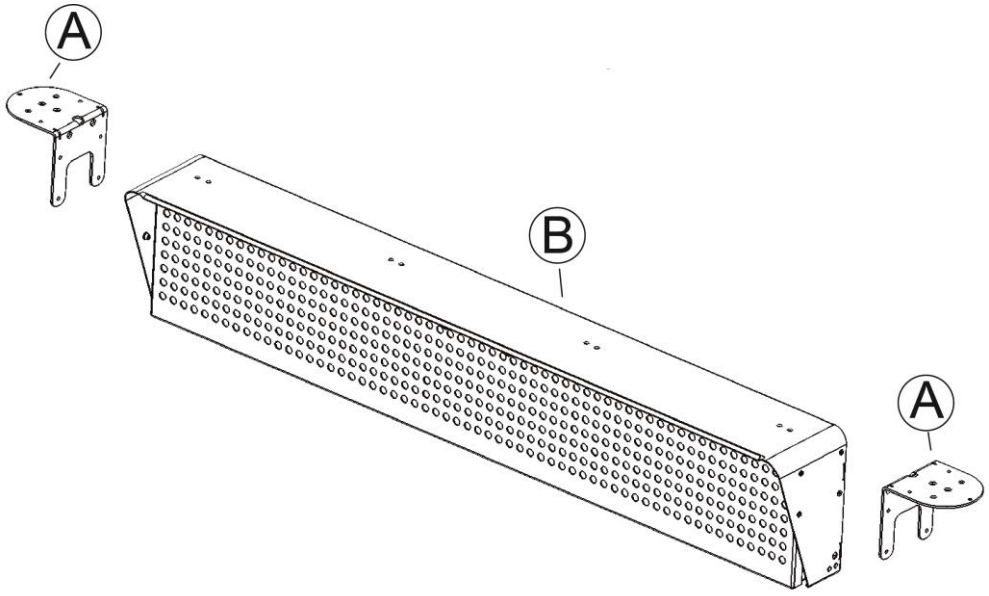
A. 300mm rear lift cylinder

3.3.2.3. REMOVABLE FAIRINGS



A. Left-hand fairing
B. Front fairing
C. Straight fairing

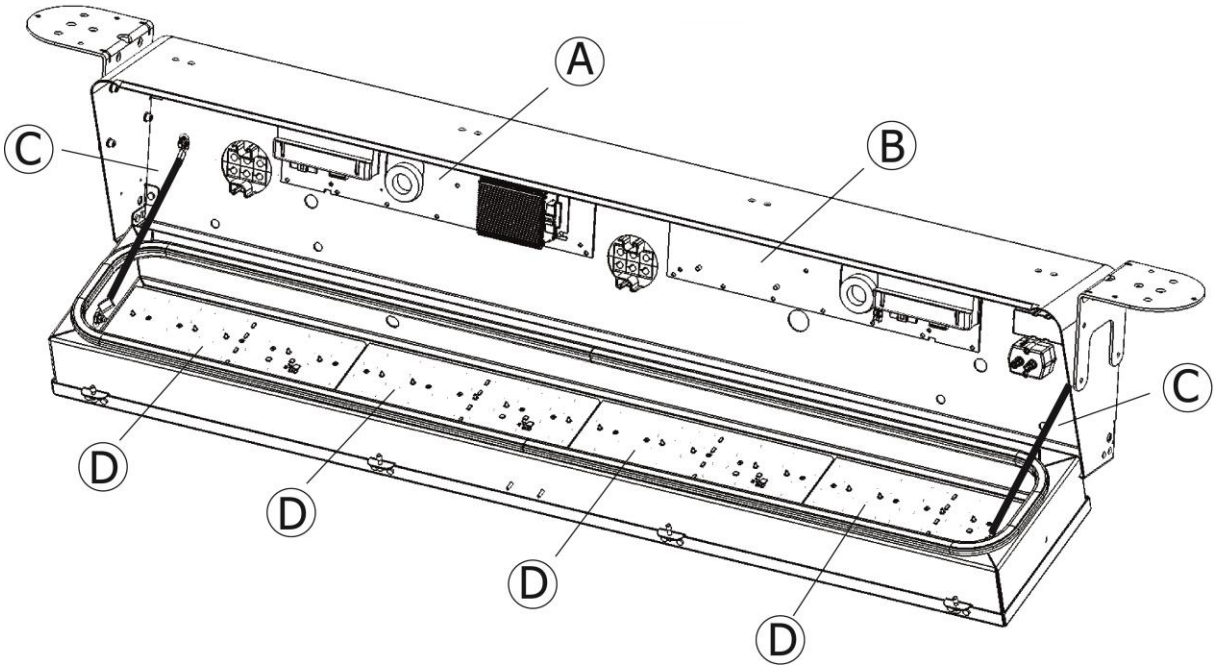
3.3.2.4. VMP BOX



A. Gyroled* mounting bracket
B. 200mm VMP Box

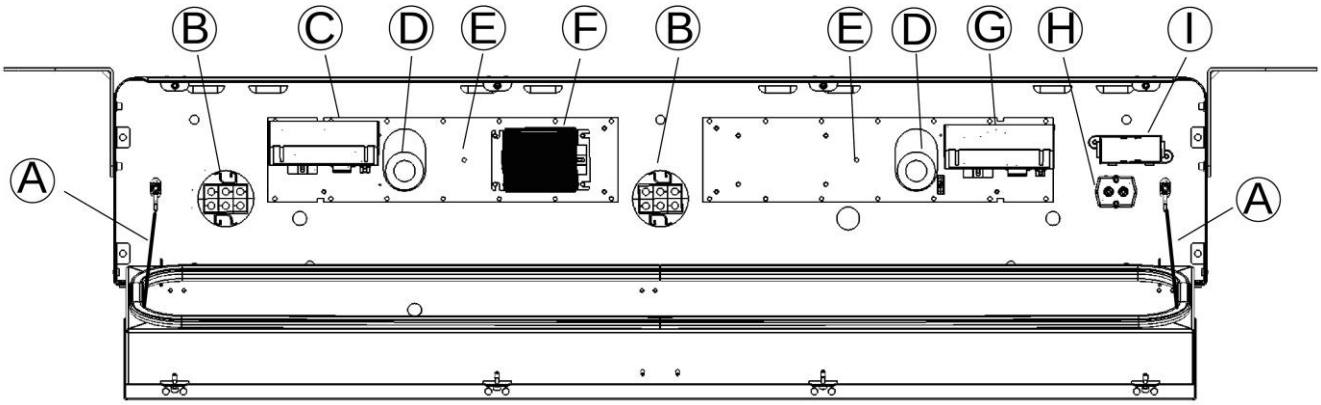
*The type of Gyroled differs according to the options.

3.3.2.5. BOX OPENED



A. Left electronic module board
B. Right Electronic module board
C. Retaining chain
D. VMP card

3.3.2.6. INSIDE BOX



A. Retaining chain
B. Waterproof grommet
C. Power electronics module CCS 292 B
D. Ventilation opening
E. Electronic module support aluminium board left
F. CCS 402 A power module
G. Power electronics module CCS 292 A (depending on options)
H. Safety stop terminal block (if optional)
I. Power harness terminal block

4. GENERAL INSTALLATION RECOMMENDATIONS

4.1. CHECKS AT THE RECEPTION

4.1.1. DOCUMENTATION

The technical documentation of the product must be present and conform to the equipment.

The product must be complete and conform to the delivery note.

4.1.2. INSTALLATION KITS (OPTIONAL)

The fairing assembly is fitted to the vehicle by means of a mounting kit. It is essential to ensure that the mounting kit supplied with the product are compatible with the vehicle to be fitted before proceeding with the installation.

- ➢ See documentation associated with the mounting kit.

4.2. TOOLS AND INGREDIENTS

The installer must provide :

- From 3 to 5 m of corrugated sheathing inner Ø 19mm
- From 3 to 5 m corrugated sheathing 10mm inner Ø if penetration lights, bi-signals ...
- Silicone putty cartridge
- Nylon collars in different sizes suitable for corrugated ducts.
- A 32 mm stepped drill or a punch drill
- Corrosion protection for the roof
- Lifting means and slings
- Spanners, drill ...

4.3. INVENTORY OF INSTALLATION MEANS

Depending on the size and weight of the equipment(s) to be installed, it is important to assess the handling conditions before the actual installation phase.

4.3.1. PLACE OF INSTALLATION

An equipped covered area is required for installation. This is to protect the vehicle and the installer from climatic hazards and their consequences.

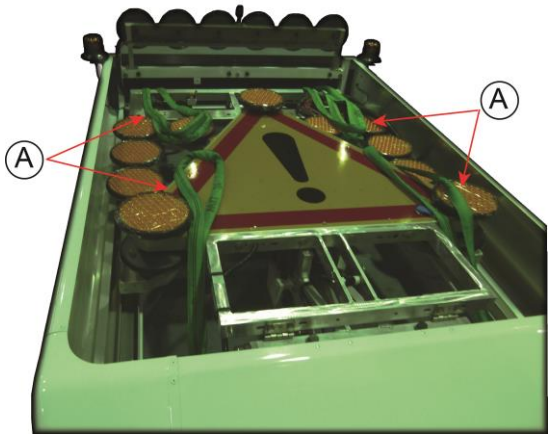
4.3.2. MEANS OF ACCESS TO THE VEHICLE ROOF

The means of access must be adapted to the situation.

The installer must be able to work easily and safely at height. Wearing suitable PPE is compulsory.

4.3.3. LIFTING MEANS

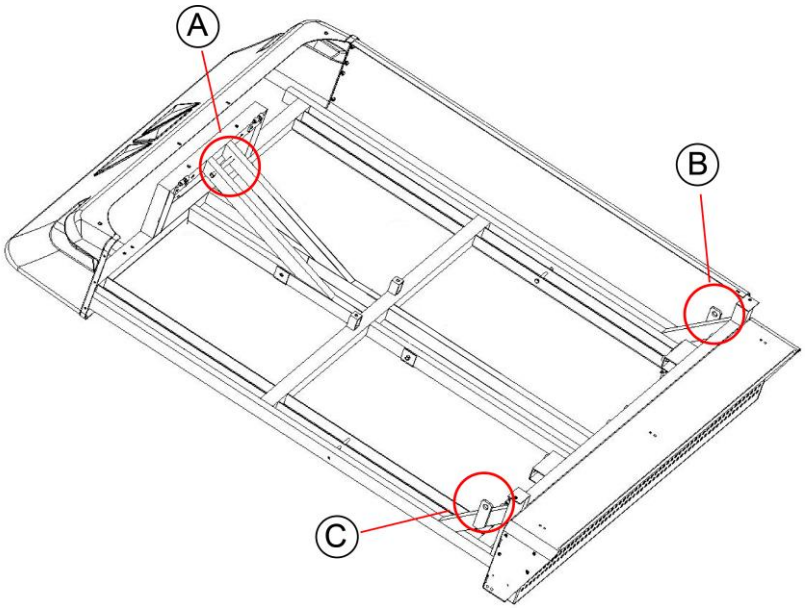
Depending on the size and weight of the equipment(s) to be installed, it is important to assess the handling conditions before the actual installation phase.



A. Slings

Make sure that the hoist supports the total load of the assembly.

The frame is equipped with 3 anchoring points.



4.4. PRE-REQUISITES FOR INSTALLATION

4.4.1. CHOICE OF MOUNTING LOCATION

At this stage, it is essential to identify all the technical constraints of the environment of the equipment to be installed:

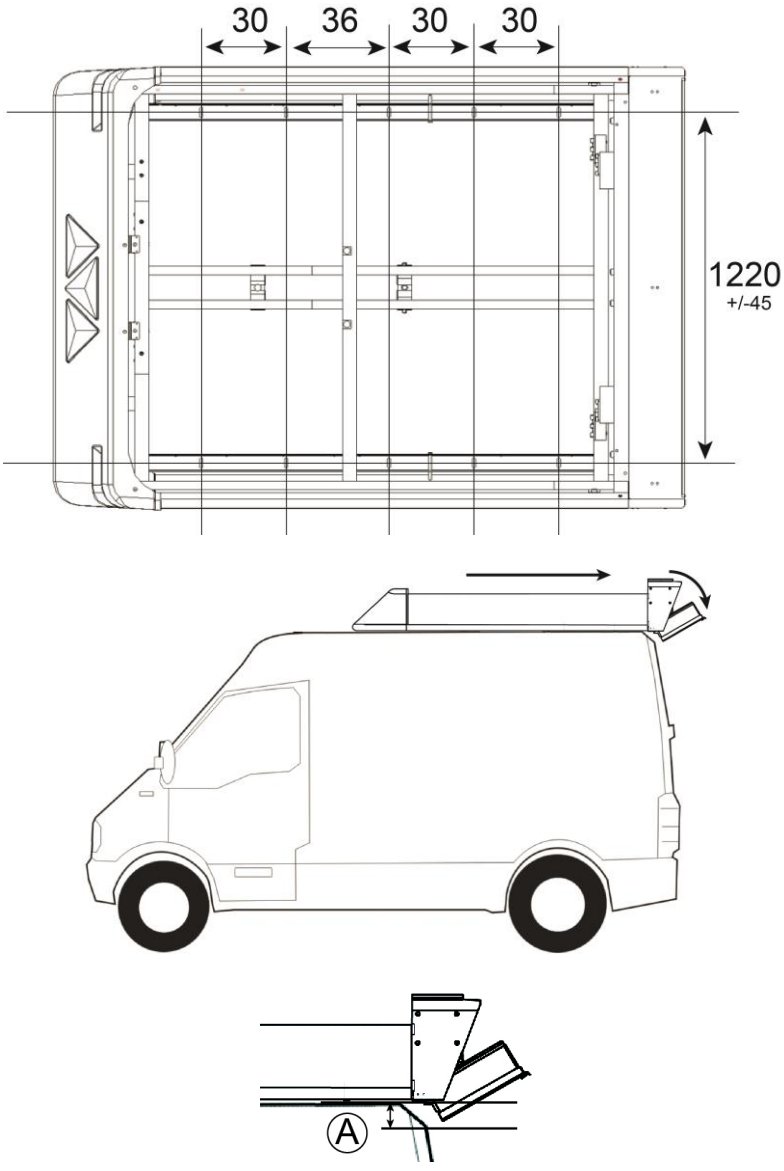
- tilting of the cabin
- movement of elements such as doors

Moving elements imply either leaving the beams at a significant length so as not to hinder deflection or moving the beams away from this constraint.

Once the equipment is installed, it must not interfere with the movement of the moving parts of the vehicle.

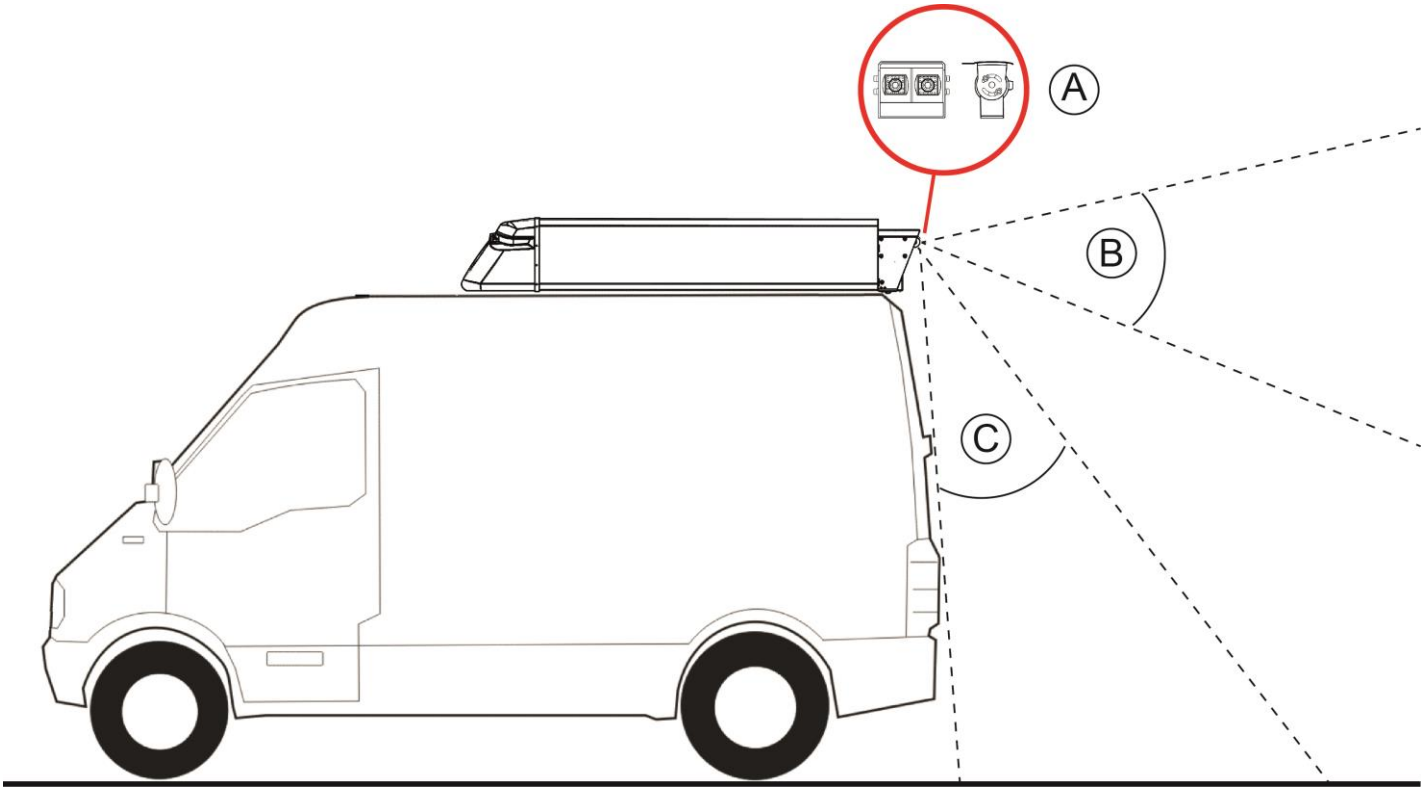
4.4.2. ADVANCE AND HEIGHT

For optimum installation on any vehicle roof, the chassis has 10 fixing points at specified intervals.



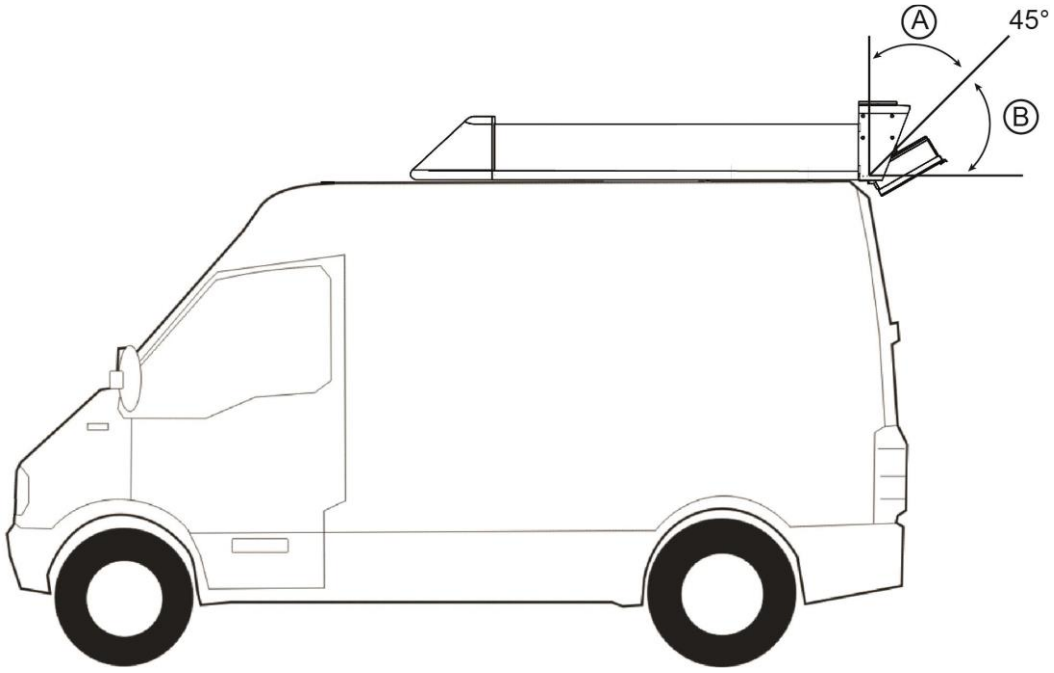
A. Height: 80mm minimum

4.4.3. CASE OF THE VIDEO OPTION



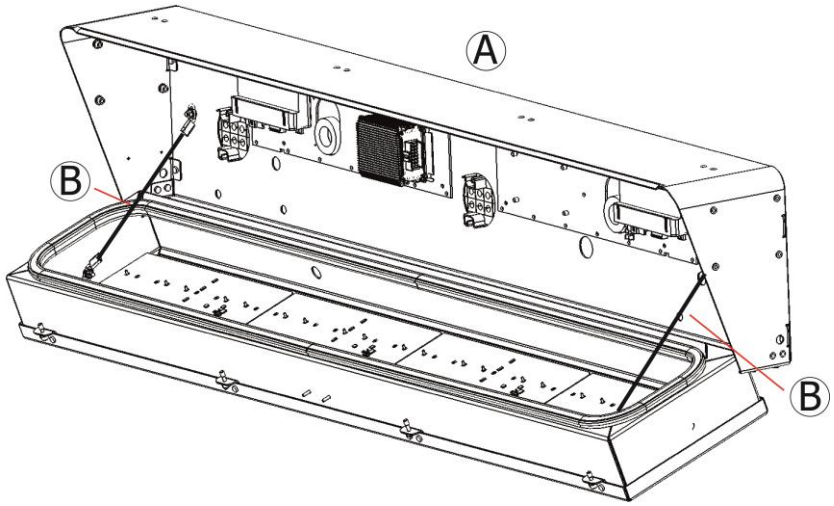
A. Dual PMV camera
B. Range of the approach camera
C. Proximity wide-angle camera range

4.4.4. ADJUSTING THE OPENING ANGLE



A. Wrong opening range
B. Correct opening range

If necessary, adjust the opening angle of the carcase by lengthening or shortening the retaining chains.



A. PMV box
B. Holding chains

The box is opened using a tool with a 5mm hexagonal head.

4.4.5. PROXIMITY OF DISTURBING ELEMENTS (RADIO, ANTENNA...)

The routing of cables and especially buses must avoid the proximity of radio links. The same applies to any other equipment likely to interfere with the lines.

In absolute terms, it is preferable to separate the routing of bus cables from that of power cables.

- thermal variations
- humidities
- various projections

Wiring should be kept as far away as possible from these sources of damage.

Translated with www.DeepL.com/Translator (free version).

4.4.6. CLEANING OF THE PAVILION

It is imperative to clean the vehicle body to avoid scratches due to possible dirt during installation. The cleanliness of the roof can also have consequences on the quality of the fixing of the assembly.

4.4.7. PROTECTION OF THE VEHICLE BODY

Before starting work, the vehicle should be protected with a flexible tarpaulin so as not to scratch the vehicle body.

4.5. DURING INSTALLATION

4.5.1. FITTING THE BINDINGS ON THE VEHICLE

Please refer to the documentation supplied with the mounting kit.

4.5.1.1. RECOMMENDATIONS FOR ROOF DRILLING (IF NECESSARY)

Blow out the roof of the vehicle to remove all residues with a compressed air canister. This operation avoids scratching the sheet metal during the following operations and also avoids the risk of damage to the paintwork over time (corrosion of sheet metal residues, etc.).

Deburr the drilling points.

Apply an anti-corrosion protection around the hole, such as "ixell Alpha" for example (not supplied).

Once the fixing holes have been drilled, lift the fairing assembly slightly to fit the rail/frame interface pads at the holes.

4.5.1.1. EVALUATION INSTALLATION OF THE ROOF ASSEMBLY

The purpose of the assessment exercise is to identify possible constraints mentioned in the previous chapter or new constraints not yet identified. The evaluation setup also allows the identification of possible roof drilling points and, in a second step, the beam routing inside the vehicle.

Open all the vehicle's doors and windows to identify any constraints.

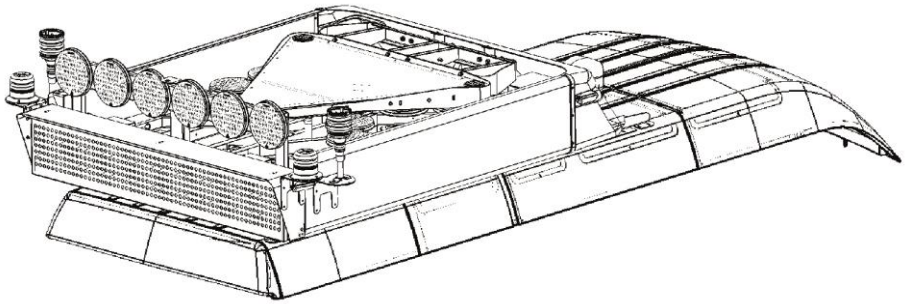
Using the lifting means, bring the streamlined assembly closer to the roof of the vehicle, taking care not to touch it, as this could damage the roof of the van.

Using the lifting means, position the fairing assembly on the fixing kit. Adjust the position according to the possible constraints due to the openings or the options of the assembly.

Remove the roof assembly again to make any adjustments following the previous checks.

4.5.1.1. INSTALLATION OF THE ASSEMBLY

Place the frame back on the fixing kit. Screw on the fixing points.



Check the positioning of the frame and tighten it.

4.5.2. ELECTRICAL INSTALLATION

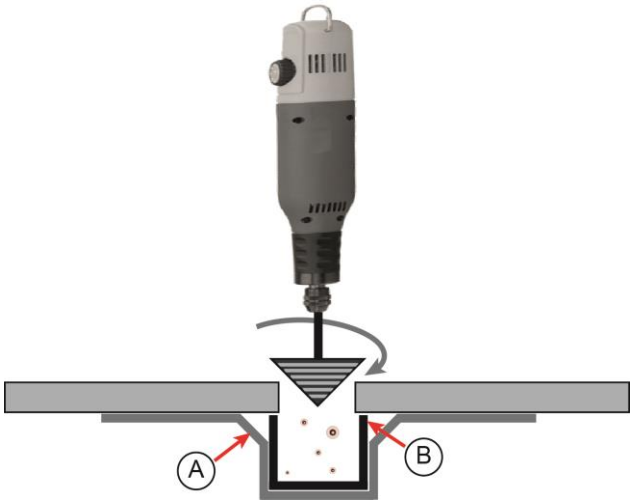
It is essential to have the wiring diagram of the streamlined assembly in order to evaluate the interconnections and identify the beam paths.

4.5.2.1. VEHICLE ROOF PASSAGE

For drilling the roof it is advisable to use a cordless drill (because it is easier to handle) with a suitable step drill, a milling cutter or a punch. The use of a milling cutter allows perfectly round holes to be drilled.

The use of a small container inside the cabin allows for the recovery of drilling residues. To facilitate the operation, it can be held under the surface to be drilled with a piece of adhesive tape.

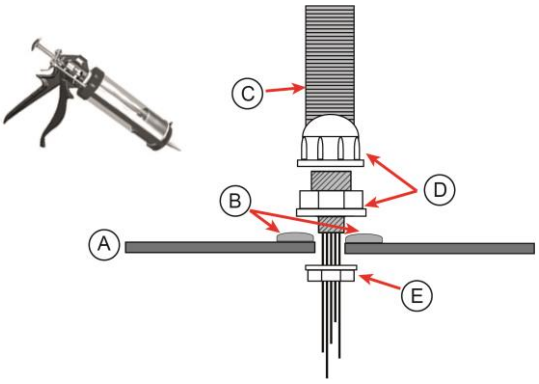
Drill to diameter Ø32mm



A. Adhesive
B. Recovery of residues

Adjust the length of the duct up to the grommet hole with an electrician's knife.

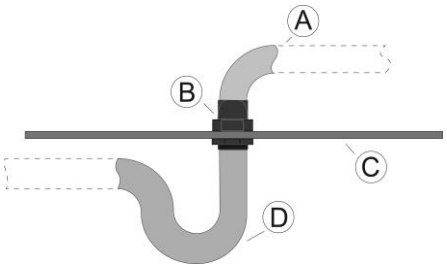
Apply silicone sealant between the grommet and the roof sheet to ensure a watertight seal between the inside and outside of the vehicle.



A. Vehicle roof panel
B. Sealing putty
C. Corrugated sheath
D. Cable gland
E. Locknut cable gland

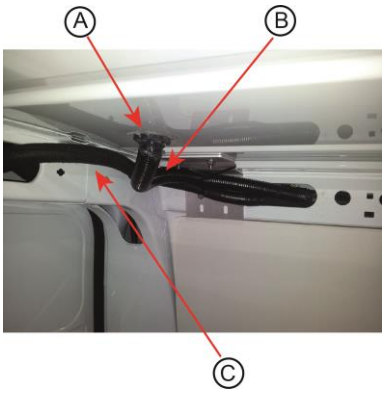
Under the pavilion, after the cable gland, adapt the technique of the drop of water on the beam respecting the harmony of the curvature.

A. Cluster
B. Cable gland
C. Vehicle roof panel
D. Drop water curve



4.5.2.2. BEAM ROUTING AND PROTECTION INSIDE THE VEHICLE

Under the cable gland pass a 3.5m Ø19mm inner corrugated sheath.

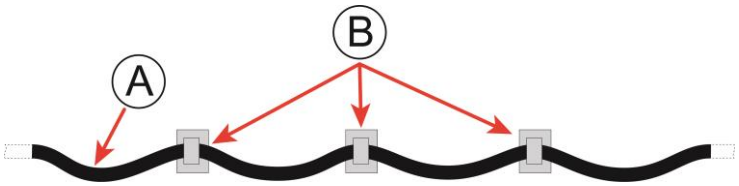


A. Cable gland
B. Main shaft
C. Auxiliary equipment secondary shaft

Locate the path that the beams must follow. Do the passages exist? If so, the passages that pose a risk to the bundle must be marked so that the strand is protected by a sheath at these locations.
Passer les faisceaux dans les goulottes ou dans les montants existants si cela est possible.

A. Structural opening for possible beam passage

Ensure that the strand is held in place along its path by means of suitable clamps.



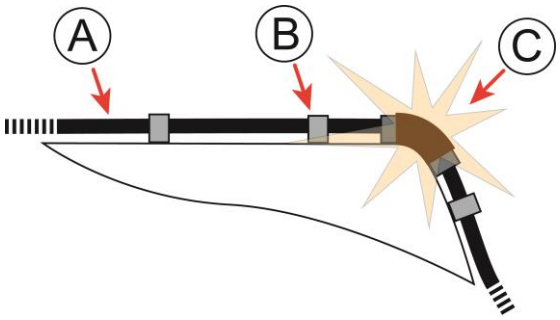
A. Strand
B. Fixing points

Do not tension the strand. It is necessary to bend it slightly between its fixing points so that it can absorb vibrations without mechanical risk of breakage.

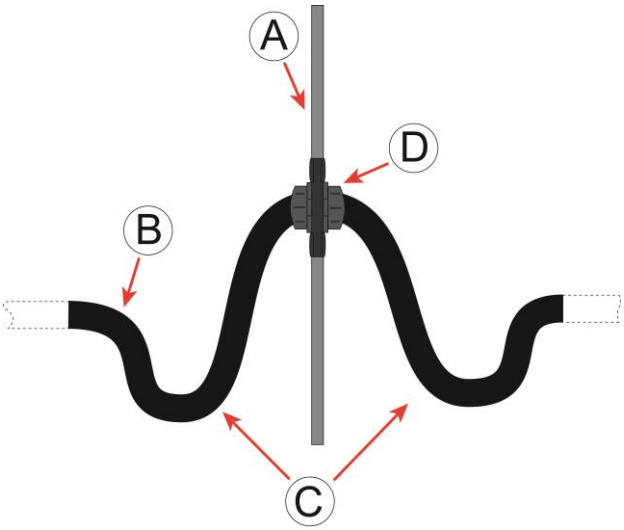
STRAND PROTECTION ON PROTRUDING PASSAGES

Protection from protruding points is achieved by installing a sheath (e.g. corrugated sheath) that is flexible enough to follow the curvature of the strand while holding it firmly.

A. Strand
B. Support collar
C. Strand protection



If a bulkhead is passed through, use a cable gland with a diameter adapted to the strand. It is necessary to apply to the latter the technique of the water drop in order to limit the phenomenon of run-off in case of high humidity.



A. Partition
B. Electrical harness
C. Water drop curve
D. Cable gland / bulkhead gland

4.5.2.3. AUXILIARY OPTIONS

When routing the strand, leave the necessary wires for the auxiliary equipment (if options are present on the fairing assembly) close to their location. Remove the wires of the AUXILIARY equipment from the protection sheath at the installation locations of the equipment to be controlled.

A. Auxiliary wires
B. Wrapped wiring harness with power harness to battery and bus harness to dashboard

4.5.2.4. INSTALLATION OF THE CONTROL PANEL

Identify the location where the control box will be installed. This location must be insulated from heating flows and excessively high temperatures, away from direct sunlight. It must also be easily accessible to the user.



Connect the secondary power supply wiring harness of the housing as well as the 8-channel CPT BUS wiring harness.

4.5.2.5. OTHER OPTIONS

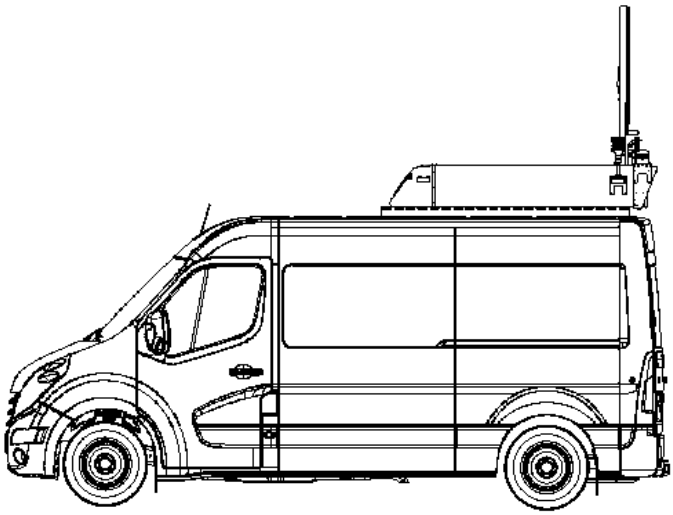
Do not omit to install the other functions or optional equipment according to the associated documentations: Information " + " After contact (Rotating Engine), hand brake module, LASER projector, video circuit, odometer system, anti-theft device etc...

4.5.2.6. FUNCTIONAL TESTS

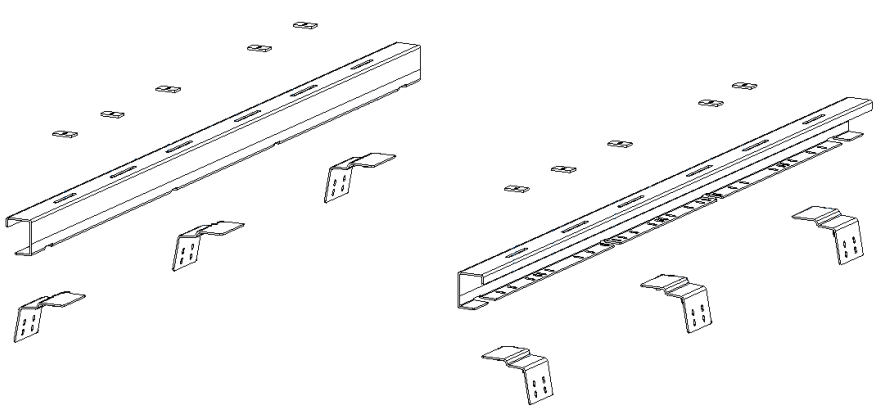
Carry out several functional tests of the assembly, with the motor at a standstill and the motor running.

5. INSTALLATION OF A ZENO ASSEMBLY

5.1. MECHANICAL INSTALLATION ON A MASTER H2 X62 TYPE VEHICLE



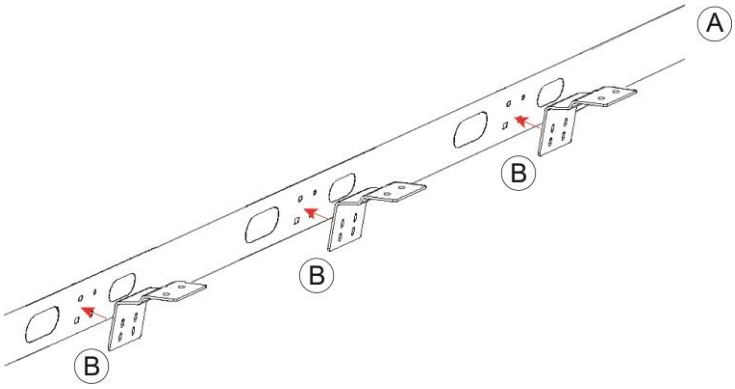
5.1.1. COMPOSITION OF KIT 30331



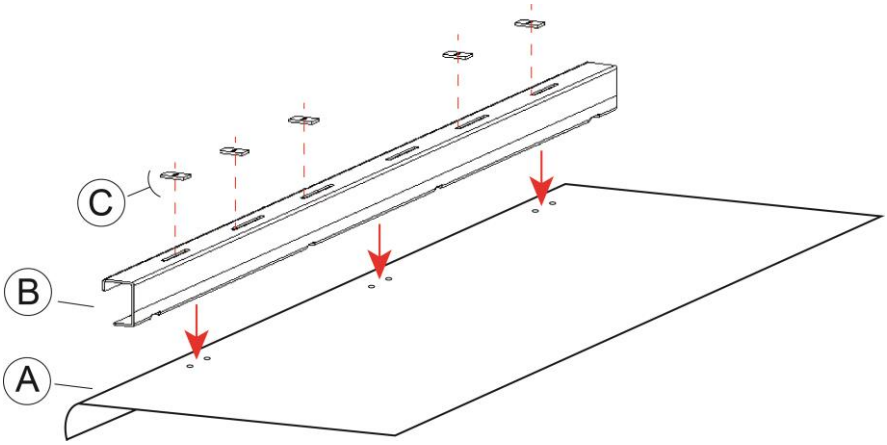
Overview of the kit without screws and bolts

DESIGNATION	REFERENCES	QUANTITIES
ALUMINIUM PROFILE FIX MASTER2010 V3	30208-00	2
REINFORCEMENT PAVILLON MASTER2010 V3	24460-00	6
BAYONET CAGE NUT M6 BICHRO	15407-00	14
CAGE NUT M6 BICHRO	15409-00	14
SCREW H M06X25 IN A4	20074-00	12
FLAT WASHER Ø6X26X1.2 IN A4	18652-00	12
WASHER EXTERNAL TOOTHING Ø6 IN	17710-00	12
SCREW H M08X25 IN A2	17962-00	22
FLAT WASHER Ø8X30X1.5 IN	17963-00	22
NUT H BASE PLATE TOOTHED M8 IN	18272-00	22
WASHER Ø7.2 X25X3 NEOPRENE	20786-00	12
WEDGE 50X30X5 NEOPRENE NR	15300-00	10
SCREW PROTECTION PLUG M8	29177-00	14

5.1.1. PRINCIPLE

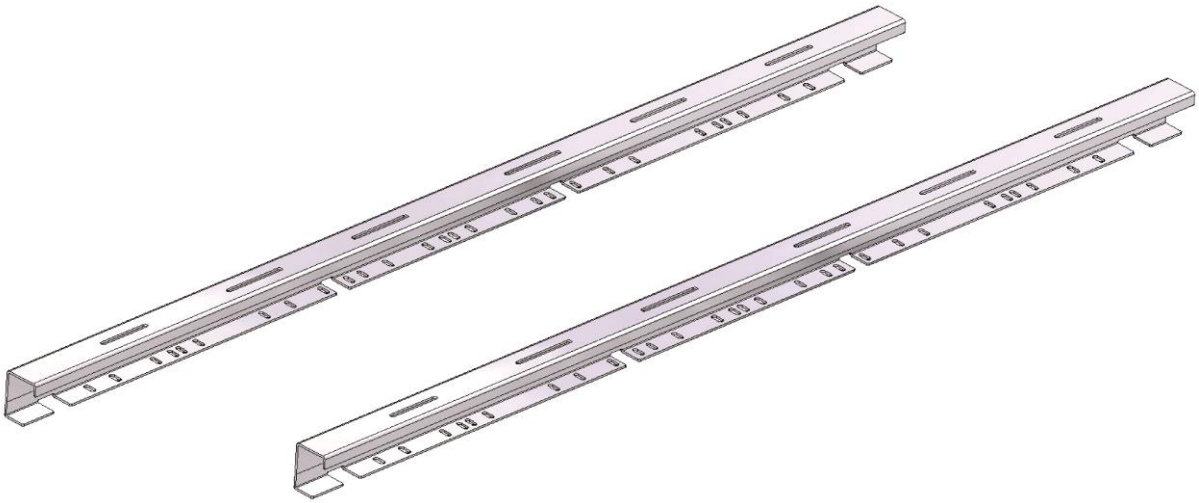


A. Vehicle interior structural pillar
B. Fixing reinforcement



A. Vehicle roof
B. Aluminium profile
C. Neoprene wedge 50x30x5

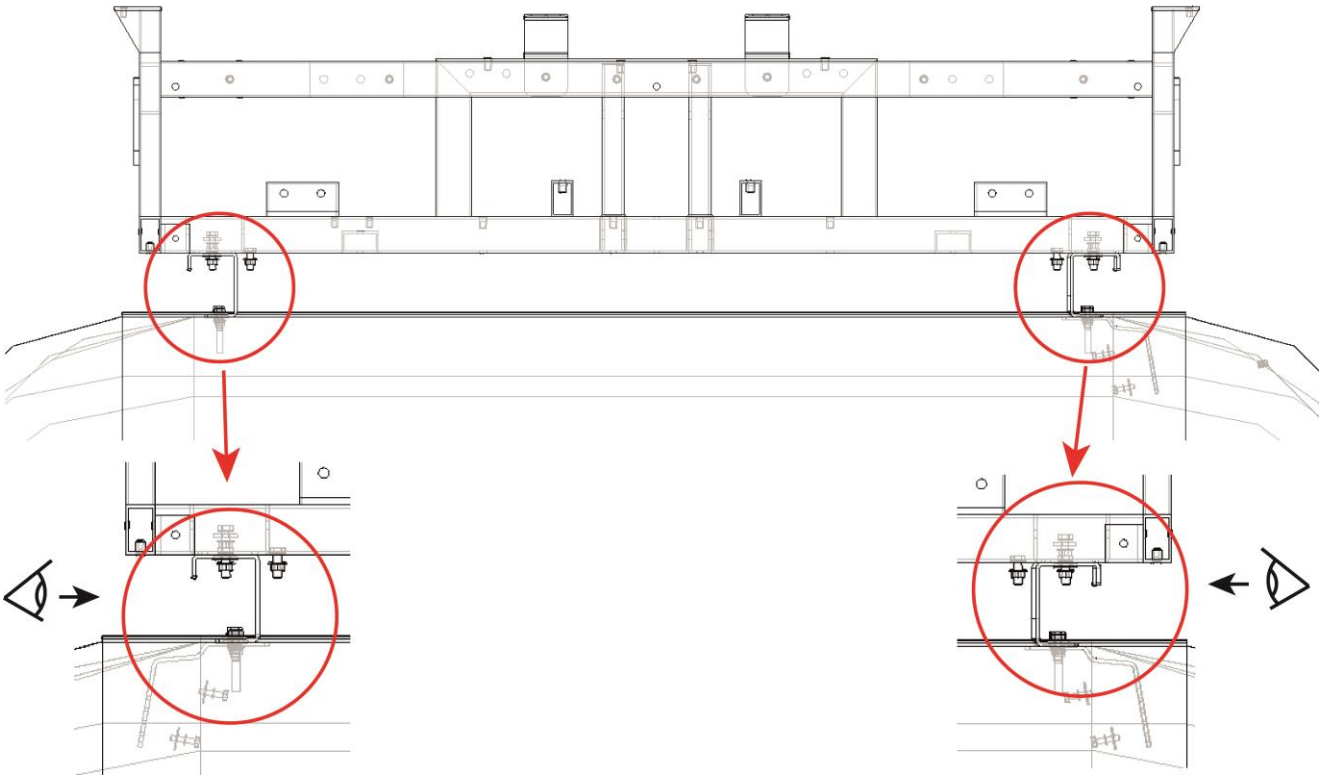
5.1.2. INSTALLATION OF ALUMINIUM PROFILES



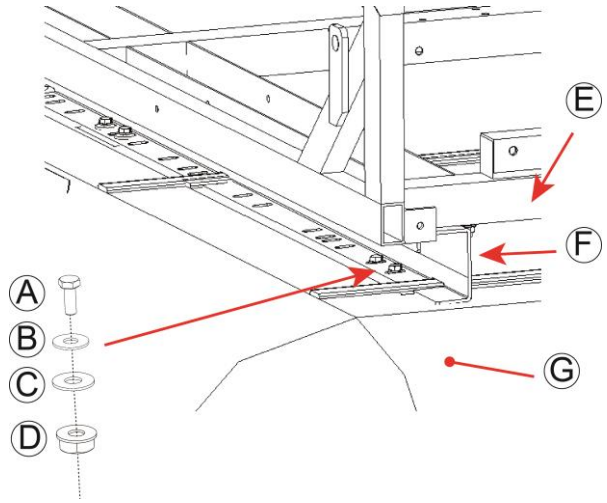
NOTE: the chassis is shown without the fairings for better understanding.

5.1.2.1. POSITIONING OF A PROFILE

The profiles are positioned open to the outside.



Depending on the prominence of the silicone gasket, it may be necessary to cut out the profile.

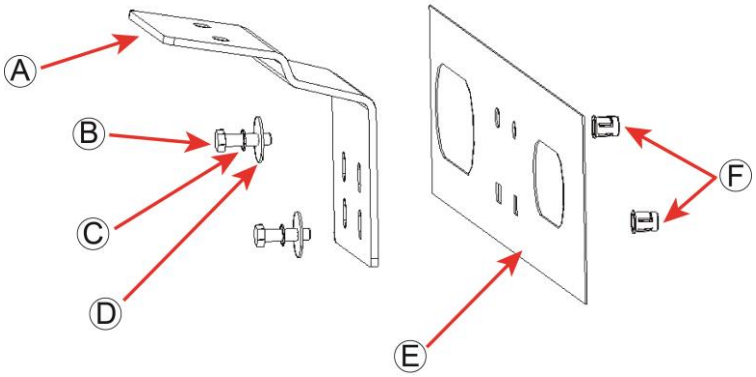


Sequencing of the screws on the aluminium profile:

1. M8 screws (A)
2. Flat washer (B)
3. Profile (F)
4. Neoprene washer (C)
5. Pavilion (G)
6. Roof reinforcement (Vehicle interior)
7. M8 flange nut (D)

Apply the silicone sealant between the profile, neoprene washer and straw mat to seal the roof passages.

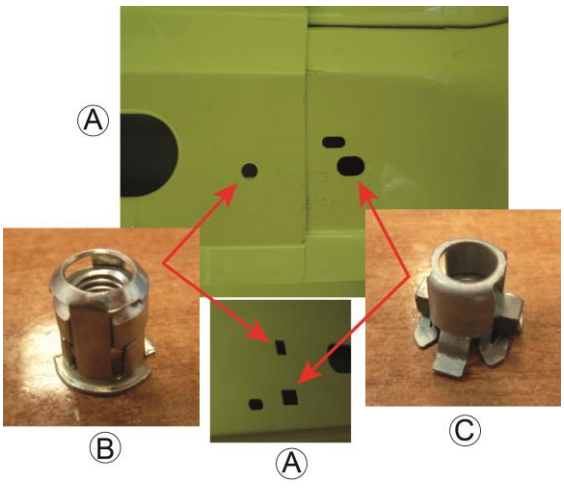
5.1.2.1. INSTALLATION OF REINFORCEMENTS



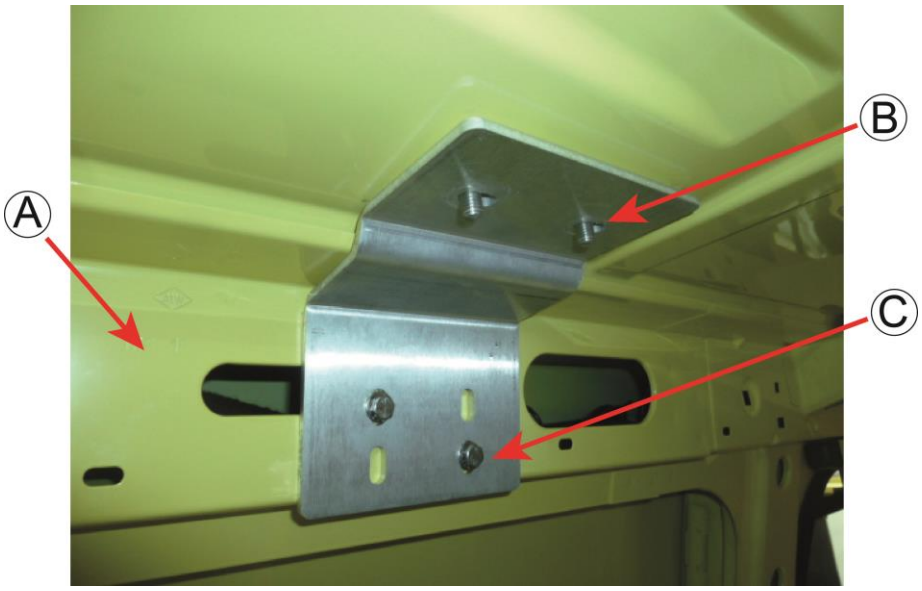
A. Reinforcement of the pavilion
B. Screw H M6
C. Fan washer
D. Flat washer
E. Vehicle interior structural pillar
F. Snap-on cage nuts

Variants of cage nuts according to the type of holes on the inner reinforcements.

A. Interior structural upright
B. Cage nut part no. 15409-00
C. Cage nut part no. 15407-00



- Pre-position the roof reinforcements by inserting the M6 screws (C) on the structural uprights (A).
- Install the M8 screws (B) through the aluminium profiles and the roof.

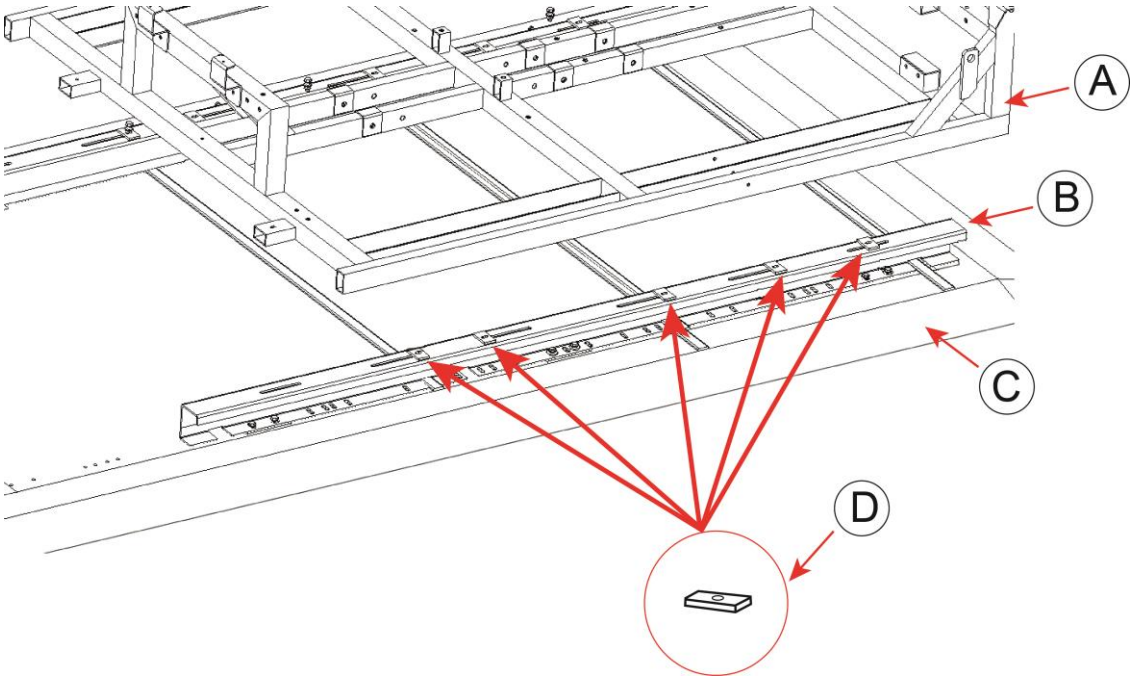


2 x M6 screws per reinforcement are sufficient except for polyester roofs (H3).
TIGHTENING TOUCH: 3.5 Nm

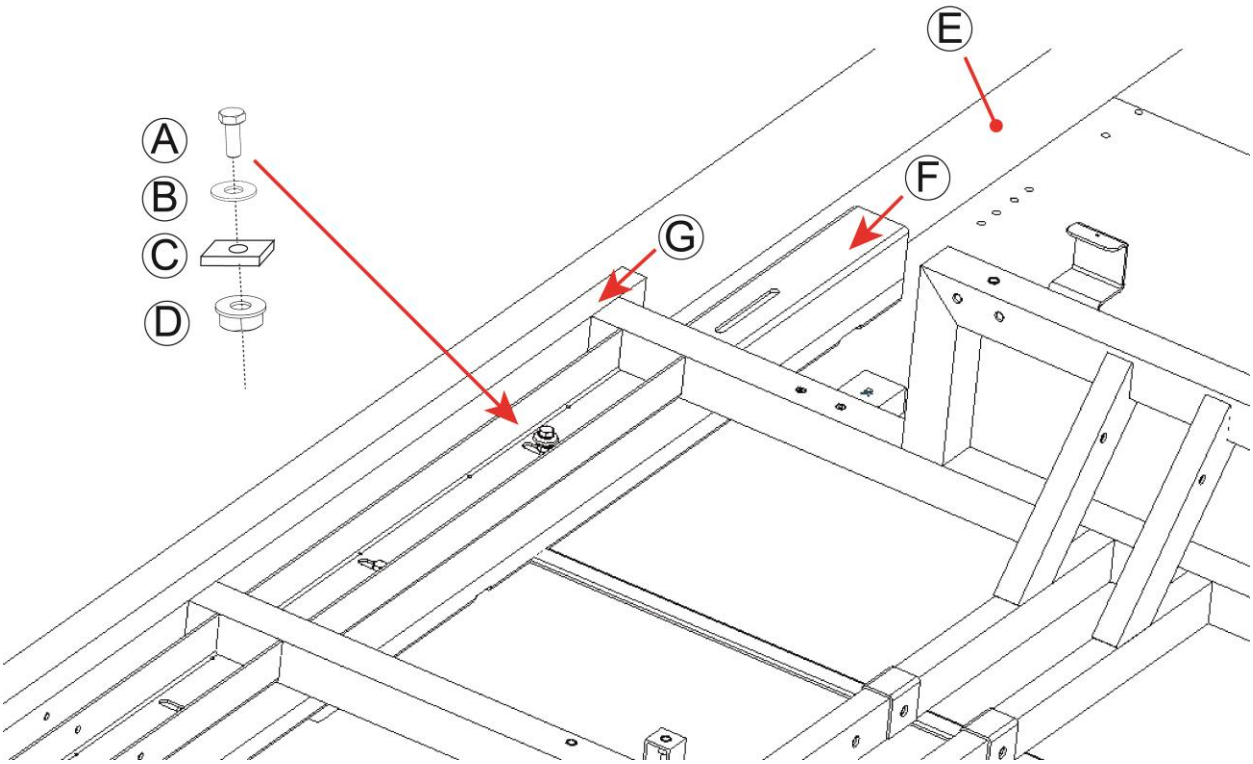
Screw on the collar nuts

TIGHTENING TOUCH: 10 Nm

5.1.3. PLACING THE FRAME ON THE PROFILES



A. Chassis assembly (shown without fairings)
B. Aluminium profile installed on the roof of the vehicle
C. Vehicle roof
D. Neoprene wedges



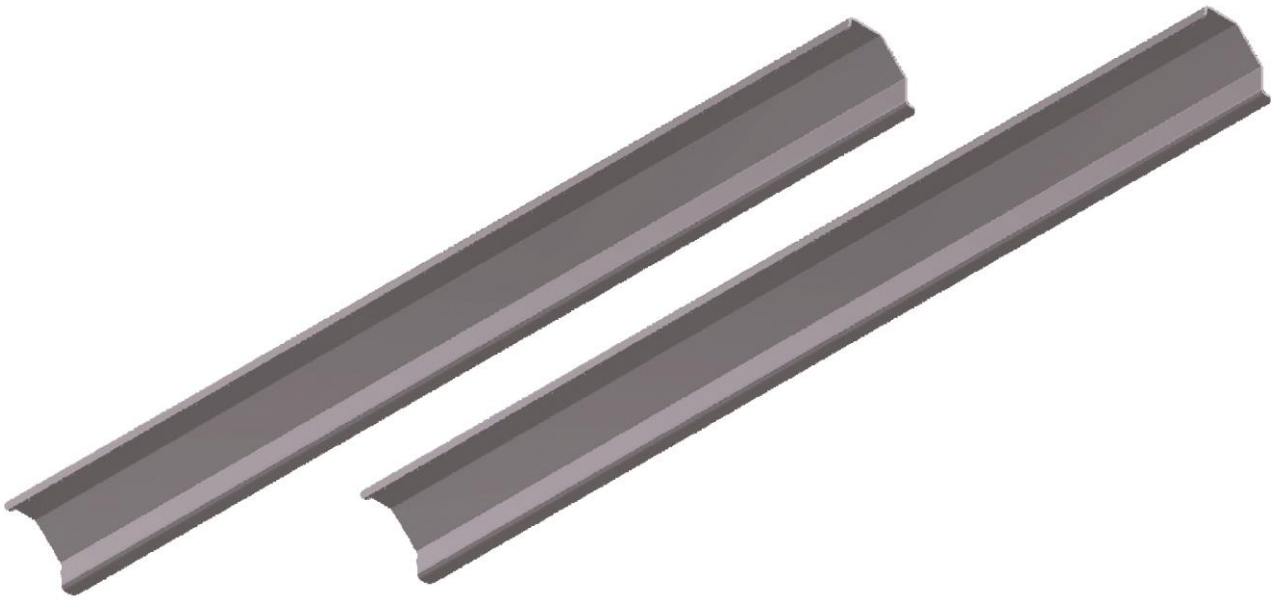
Sequencing of the screws on the frame to the profile on the roof of the vehicle (E):

1. M8 screws (A)
2. Flat washer (B)
3. Chassis (L)
4. Neoprene wedge (C)
5. Profile (F)
6. M8 flange nut (D)

TORQUE TIGHTENING : 10 Nm

5.2. MECHANICAL INSTALLATION ON FIAT / PSA / VW / MERCEDES VEHICLES

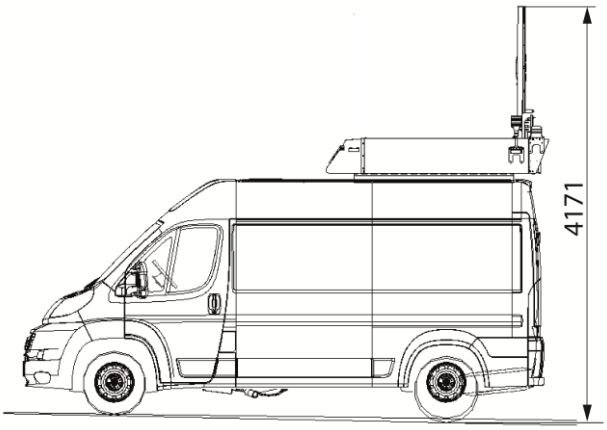
5.2.1. COMPOSITION OF KIT 23479

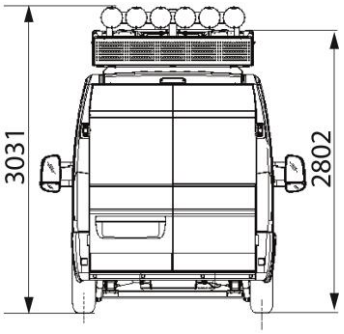


DESIGNATION	REFERENCES	QUANTITIES
PROFILE ALU FIX BOXER LG1600	23478-00	2,00
WEDGE FIXED TO CARENE NG09	20243-01	12,00
SCREW H M08X25 IN A2	17962-00	22,00
NUT H BASE PLATE TOOTHED M8 IN	18272-00	22,00
FLAT WASHER Ø8X30X1.5 IN	17963-00	22,00
WASHER Ø7.2 X25X3 NEOPRENE	20786-00	12.00
ASSEMBLY AID L-DRILLING	30231-00	1.00
WEDGE 50X30X5 NEOPRENE NR	15300-00	10

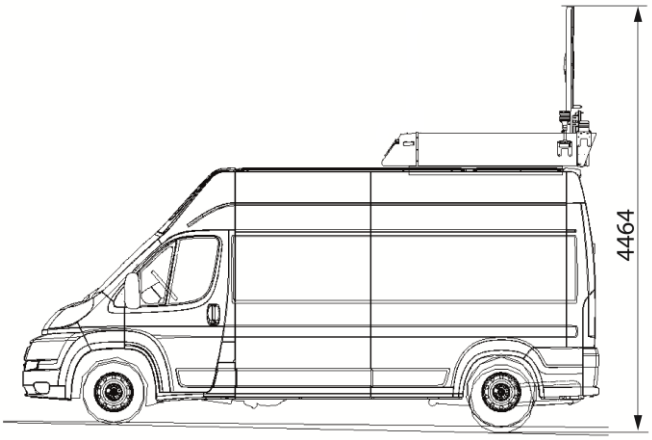
5.2.1. DIMENSIONS

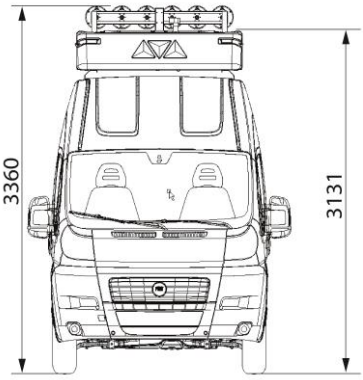
5.2.1.1. BOXER H2



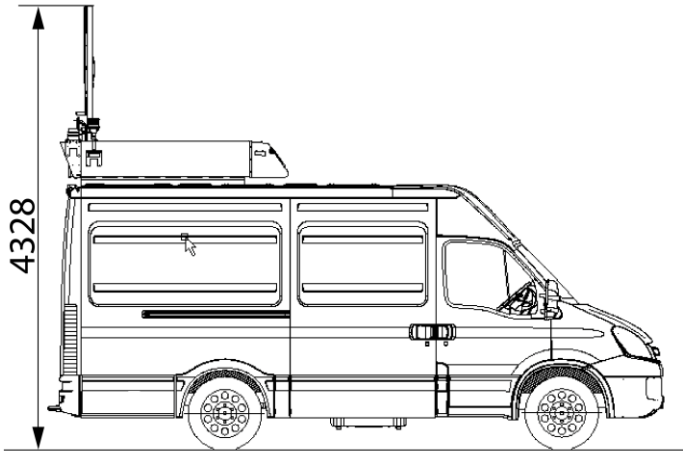


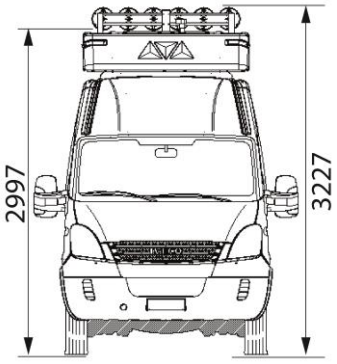
5.2.1.2. BOXER H3



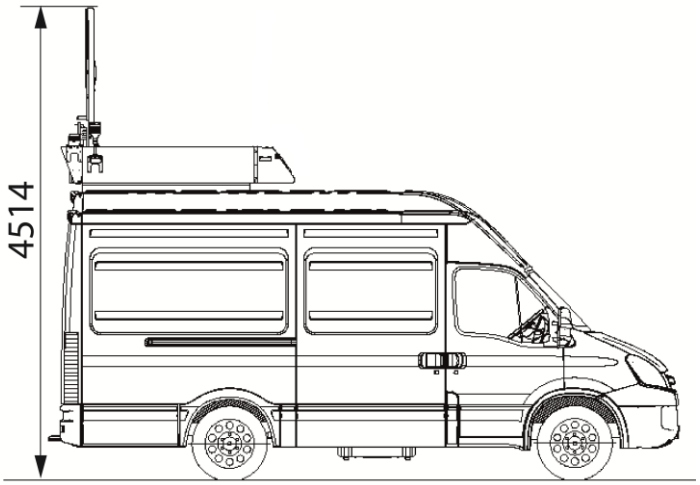


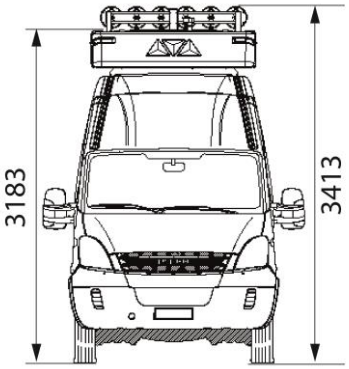
5.2.1.3. IVECO H2



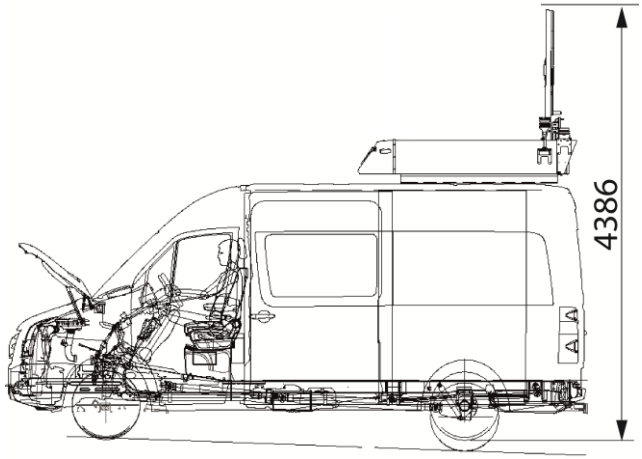


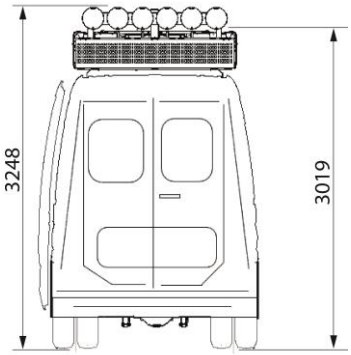
5.2.1.4. SUR IVECO H3



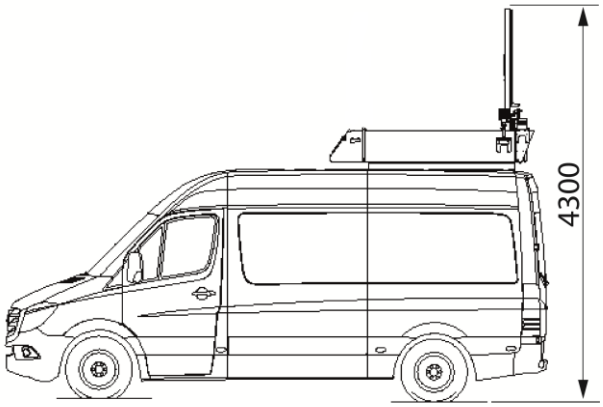


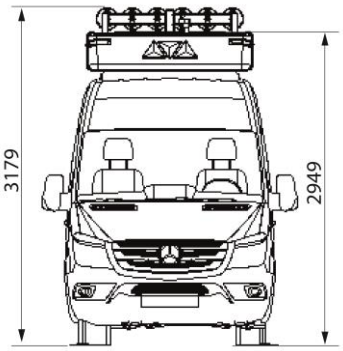
5.2.1.5. VW CRAFTER H2





5.2.1.6. SPRINTER H2

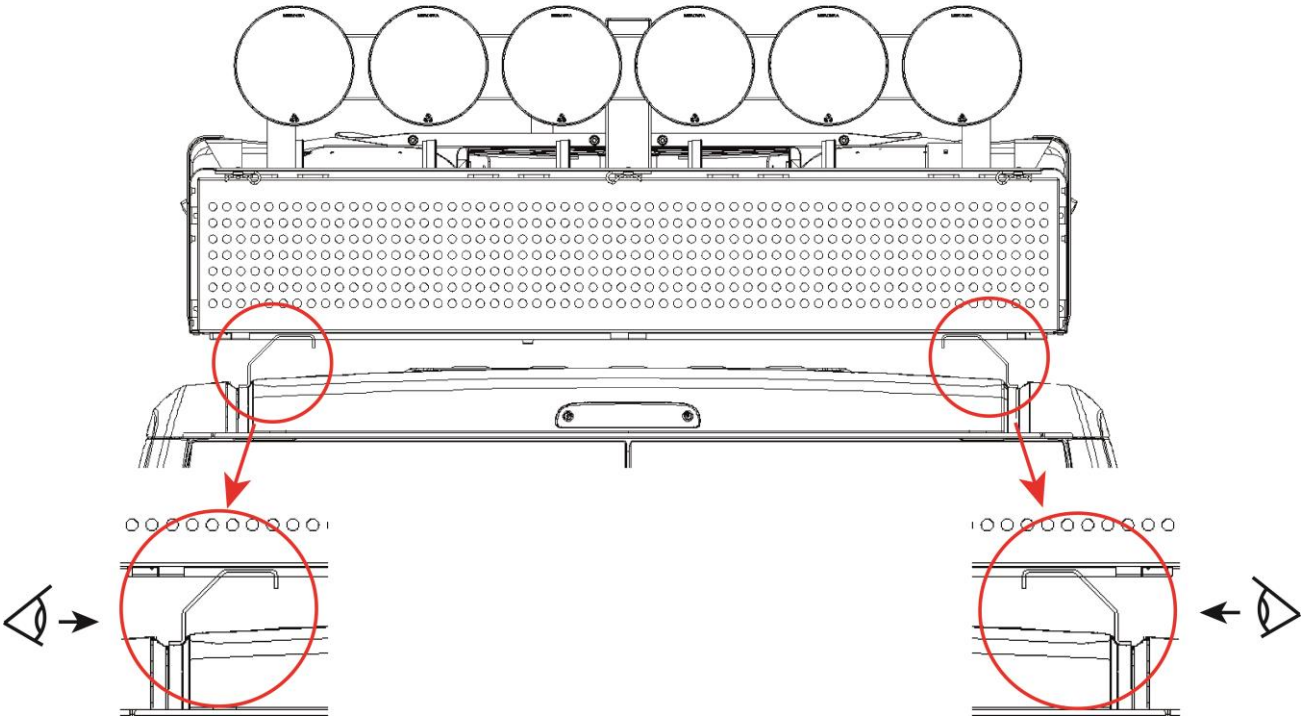




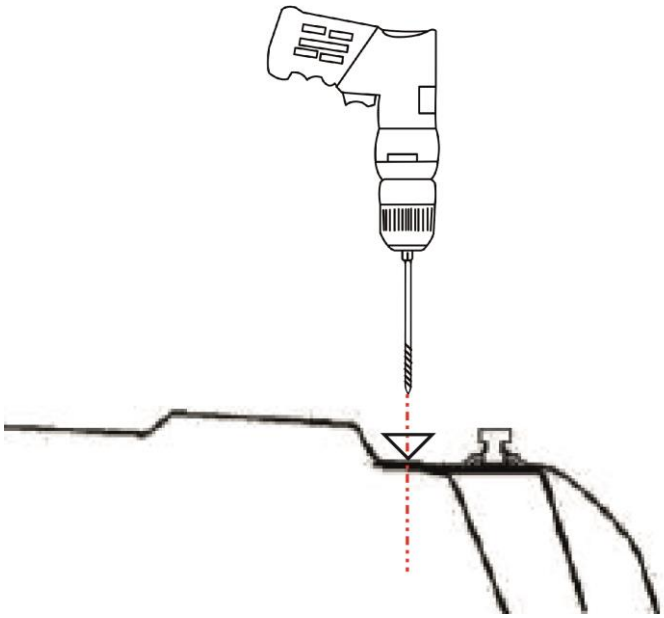
5.2.2. 5.2.2. POSITIONING OF THE PROFILES

5.2.2.1. 5.2.2.1. ON FIAT / PSA COMMERCIAL VEHICLES

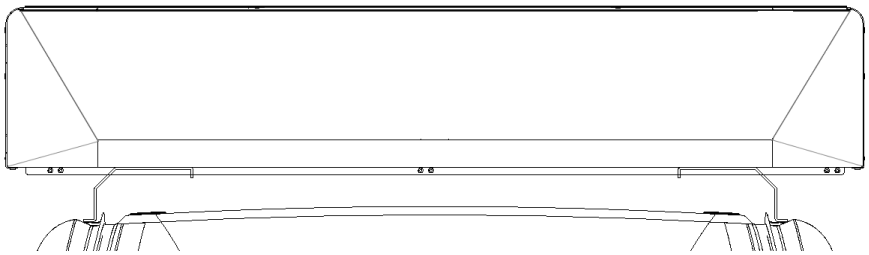
The rails must be positioned open to the outside.



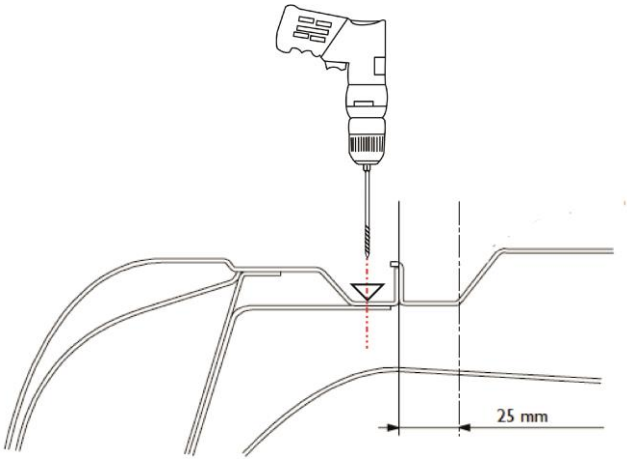
Drilling location on BOXER and DUCATO type vehicles:



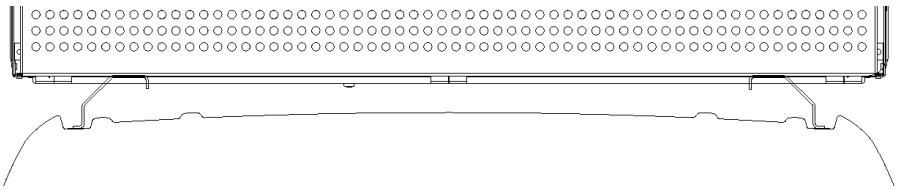
5.2.2.2. ON COMMERCIAL VEHICLES IVECO DAILY



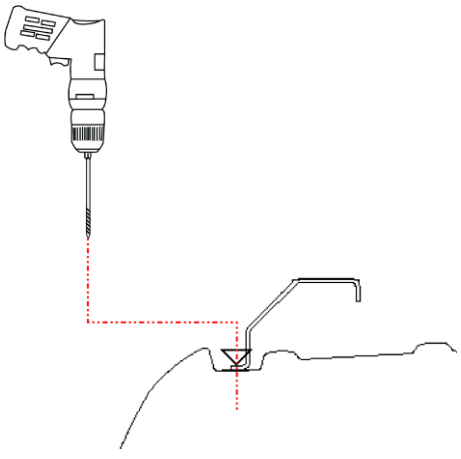
Drilling location :



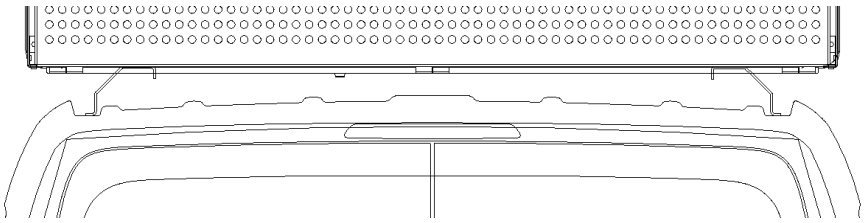
5.2.2.3. ON COMMERCIAL VEHICLES VOLKSWAGEN CRAFTER



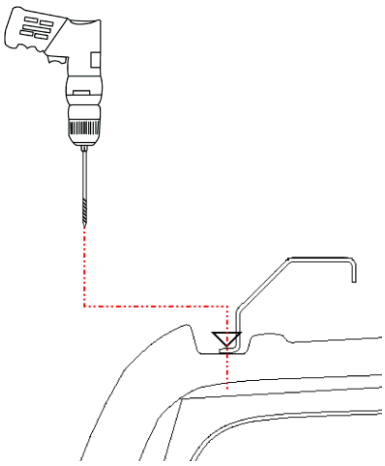
Drilling location :



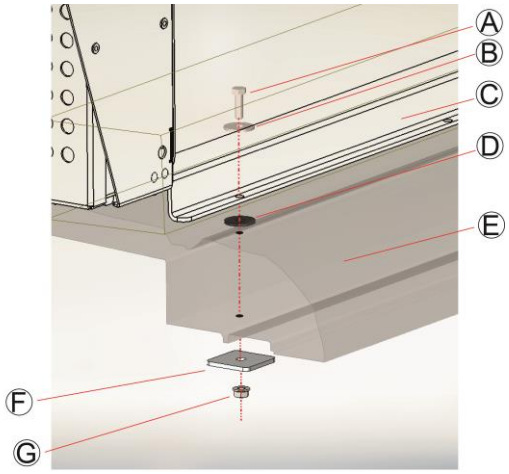
5.2.2.4. ON MERCEDES SPRINTER VEHICLES



Drilling location :



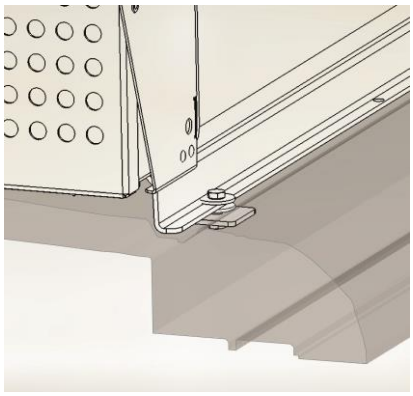
5.2.3. INSTALLATION OF ALUMINIUM PROFILES FROM KIT 23479



Sequencing of the screws on the aluminium profile and the roof of the vehicle:

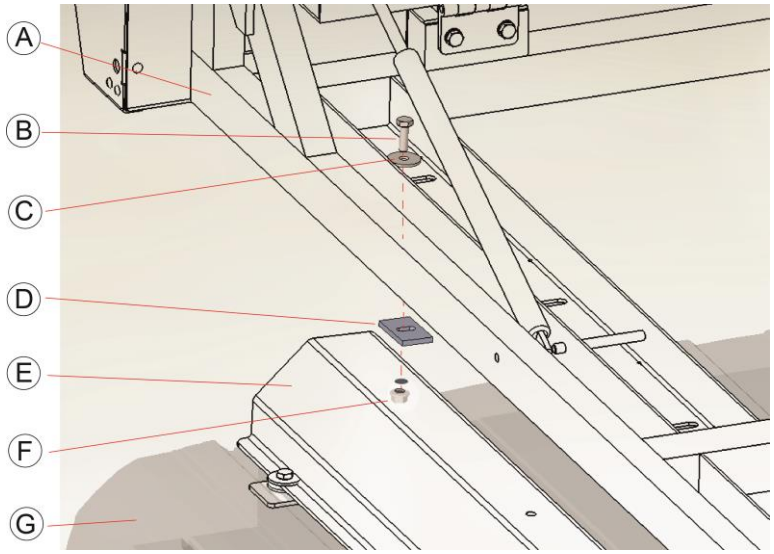
A. M8 screws
B. Flat washer
C. Aluminium profile
D. Neoprene washer
E. Vehicle roof
F. Cale
G. M8 nut

Drilling diameter of the roof holes: Ø9



Apply silicone sealant between the profile, neoprene washer and straw to ensure the roof passages are sealed.
TORQUE TIGHTENING : 10 Nm

5.2.4. PLACING THE FRAME ON THE ALUMINIUM PROFILES



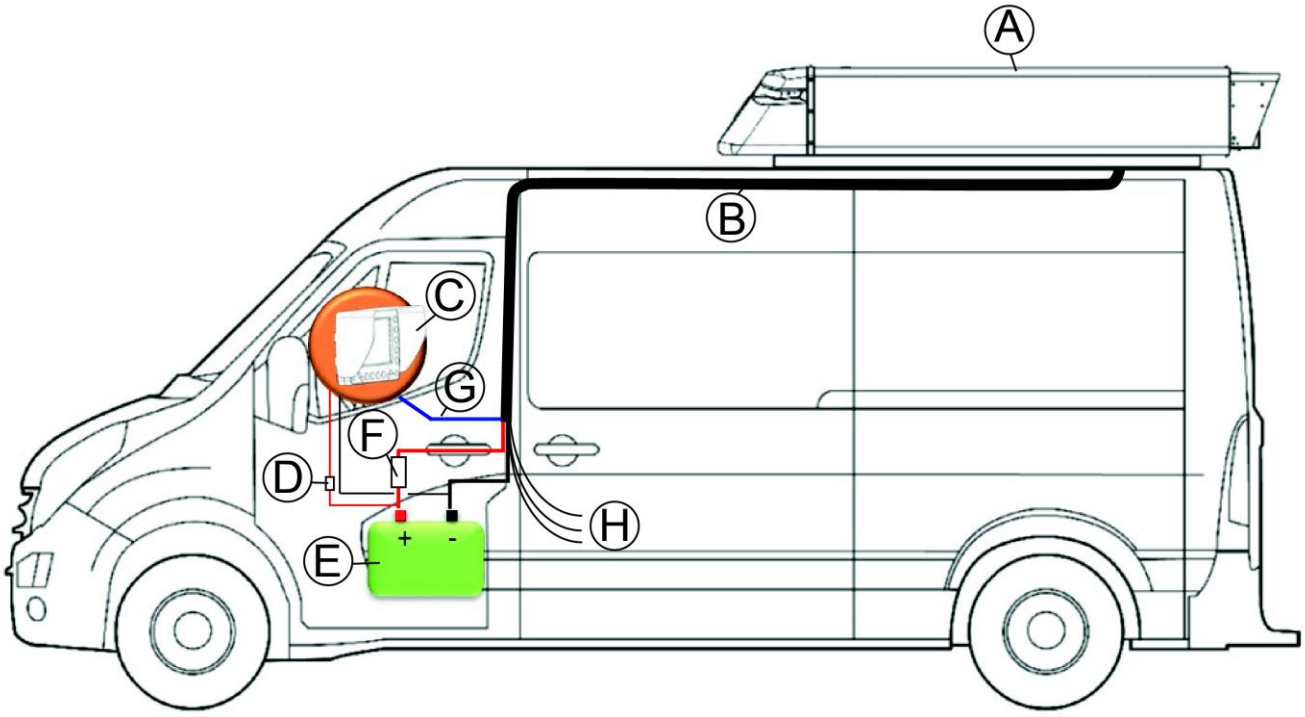
Sequencing of the frame screws on the aluminium profile:

A. Chassis assembly
B. M8 screws
C. Flat washer
D. Neoprene wedge
E. Aluminium profile
F. M8 collar nut
G. Vehicle roof

TORQUE TIGHTENING : 10 Nm

5.3. ELECTRICAL INSTALLATION OF A 200 SERIES ZENO ASSEMBLY

5.3.1. GENERAL SYNOPSIS

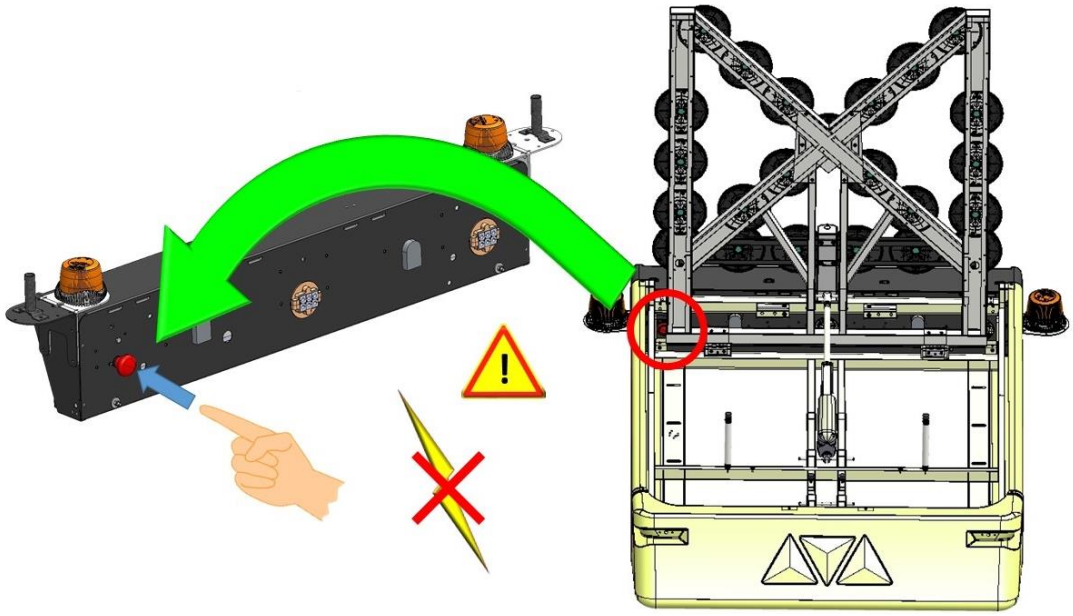


A. MERCURA fairing assembly
B. Electrical harness of the streamlined assembly
C. XXL Graphic Touch Control Panel
D. Wiring harness and fuse power supply control box
E. Vehicle battery
F. Power harness and general fuse
G. CAN bus harness
H. Auxiliary inputs and outputs

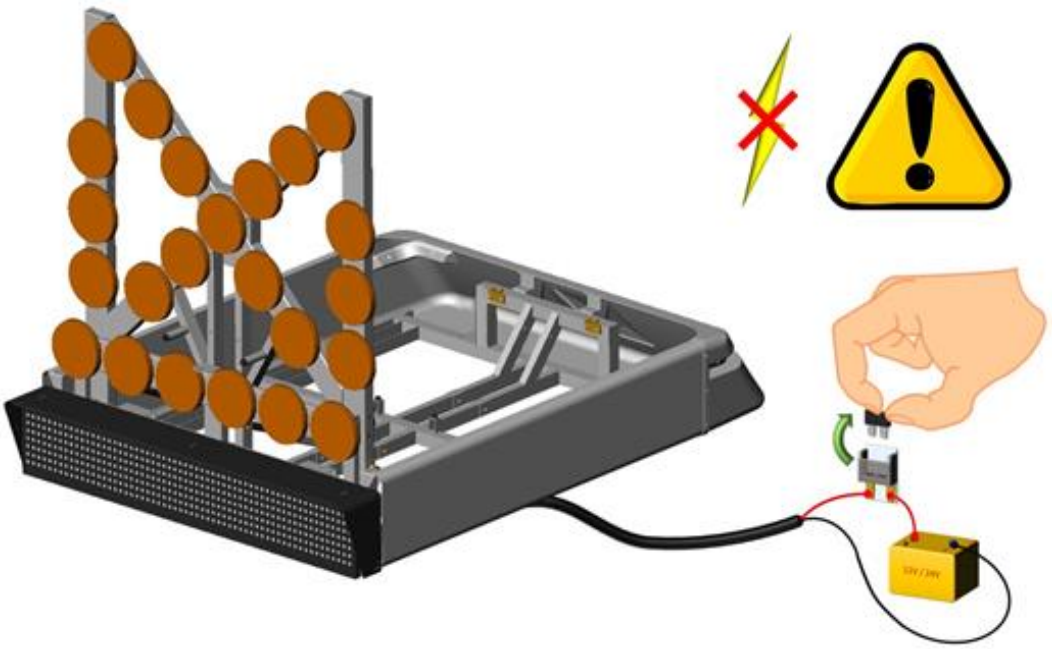
The wiring harness of the streamlined assembly is a standard harness. Functions are available on it. Depending on requirements, it may or may not be useful to wire them. If these wires are not wired, it is essential to insulate them in order to avoid any risk of damage to the bundle, the system or its environment.

5.3.2. SAFETY INSTRUCTIONS BEFORE INSTALLATION

BEFORE INSTALLATION OR BEFORE ANY WORK IS CARRIED OUT ON THE ROOF ASSEMBLY PRESS THE SAFETY STOP ON THE ROOF ASSEMBLY

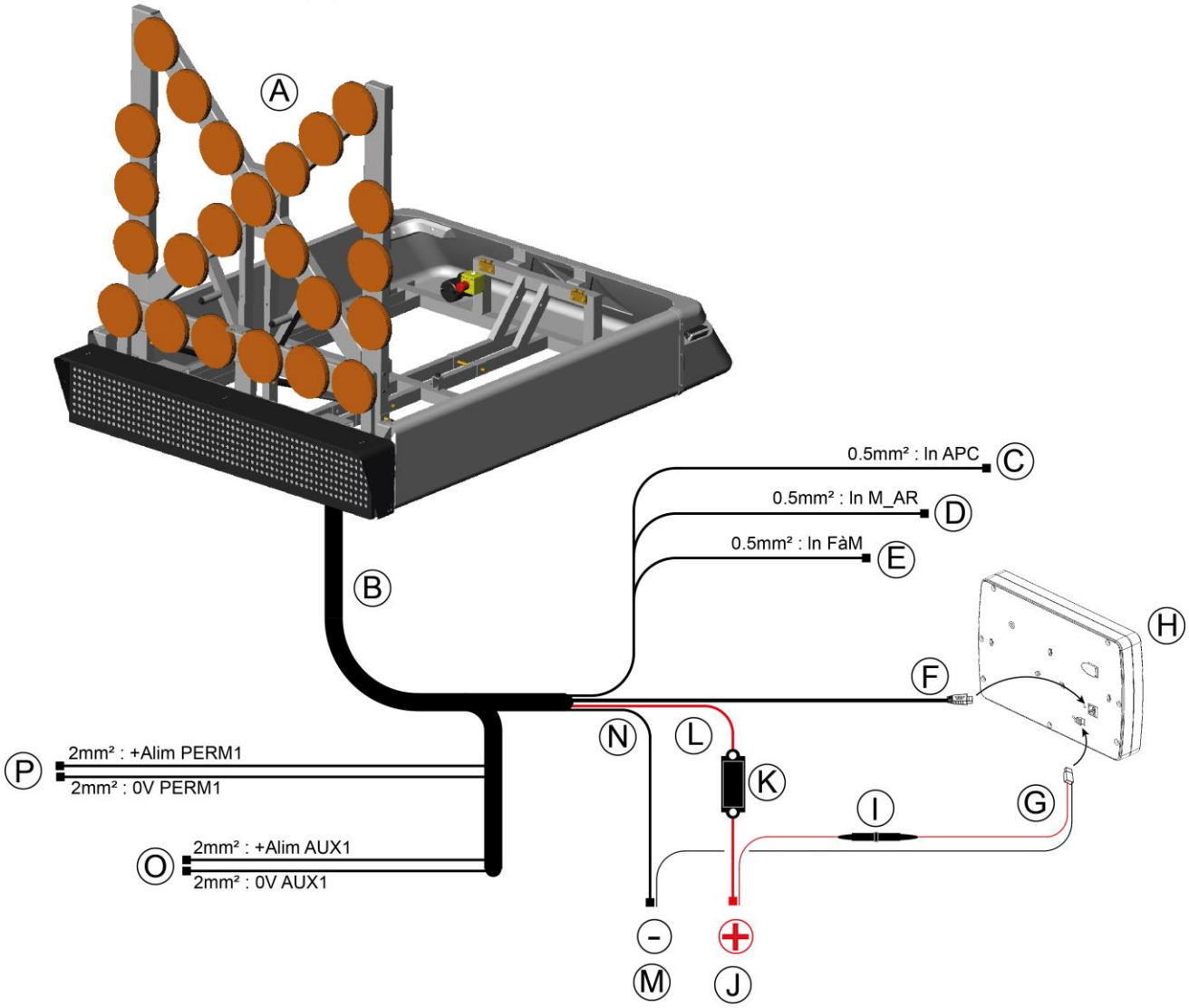


ALSO DISCONNECT THE GENERAL FUSE



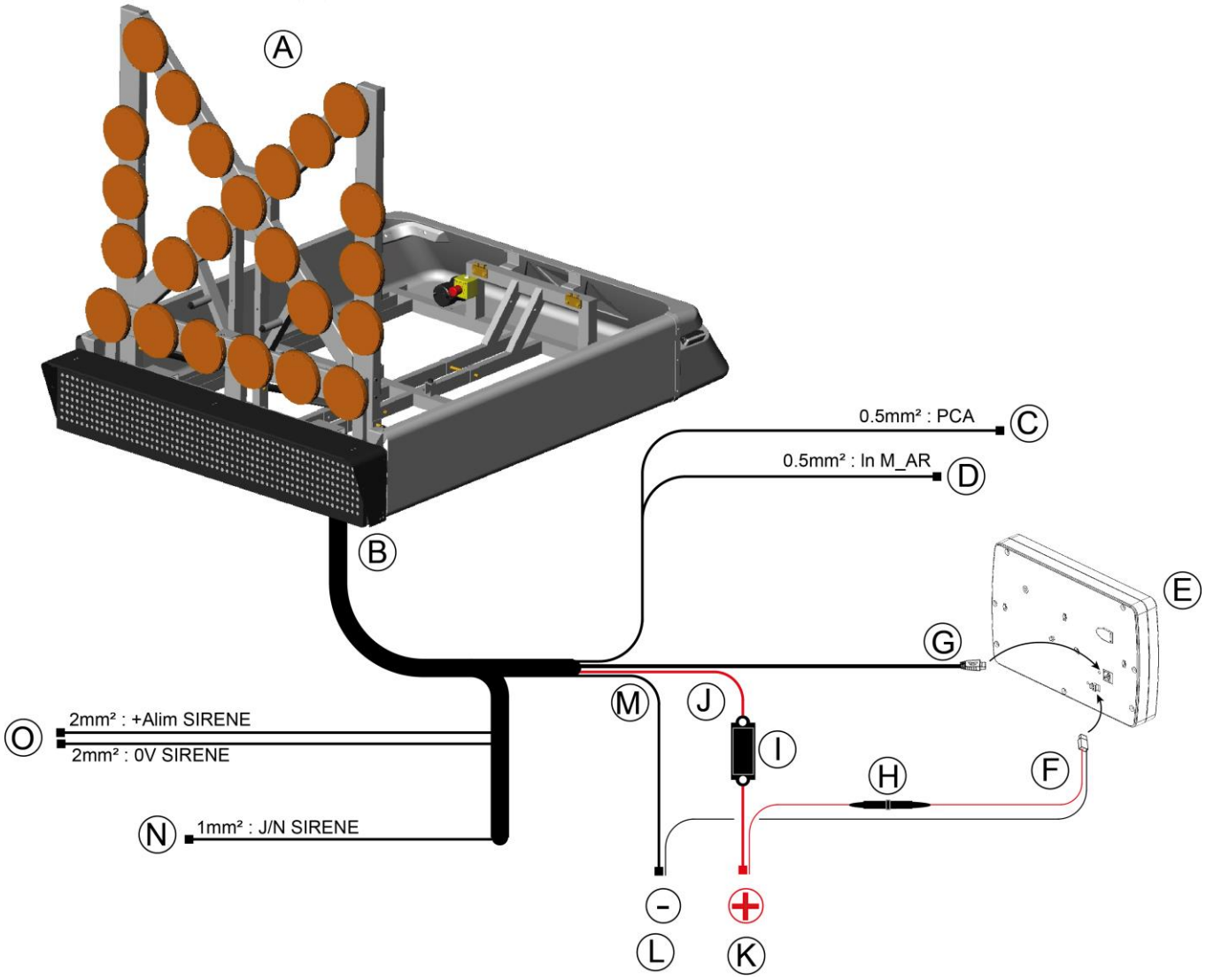
RECONFIGURE AT THE END TO MAKE THE WHOLE THING FUNCTIONAL AGAIN

5.3.3. WIRING DIAGRAM FOR ROAD SERVICE VERSIONS



A. Roof assembly
B. Electrical harness
C. After contact "+APC" information input (1*)
D. Reverse information input (2**) - (If Video option)
E. Handbrake information input (3***) - (Option handbrake module required)
F. CAN BUS harness
G. XXL Graphic Control Unit Power Supply Beam
H. XXL graphic control unit
I. Fuse and fuse holder for the power supply harness of the graphic control box.
J. Terminal " + " Battery
K. General Maxi-Fuse
L. Red wire 10mm² power supply
M. Terminal" - "Battery
N. Black wire 10mm² power supply
O. Auxiliary Equipment Output (3A)
P. Continuous Power Supply Output (3A)

5.3.4. WIRING DIAGRAM FIRE BRIGADE VERSIONS



A. Roof assembly
B. Electrical harness
C. Pedal Chief of Apparatus "PCA" information input (4****)
D. Reverse information input (2**) - (If Video option)
E. XXL graphic control unit
F. XXL Graphic Control Unit Power Supply Beam
G. CAN BUS bundle
H. Fuse and fuse holder for the power supply harness of the graphic control box.
I. General Maxi-Fuse
J. Red wire 10mm² power supply
K. Terminal " + " Battery
L. Terminal" - "Battery
M. Black wire 10mm² power supply
N. Night Siren control output ("- " 100mA)
O. Siren control output (6A)

(1*) After contact « +APC » Input

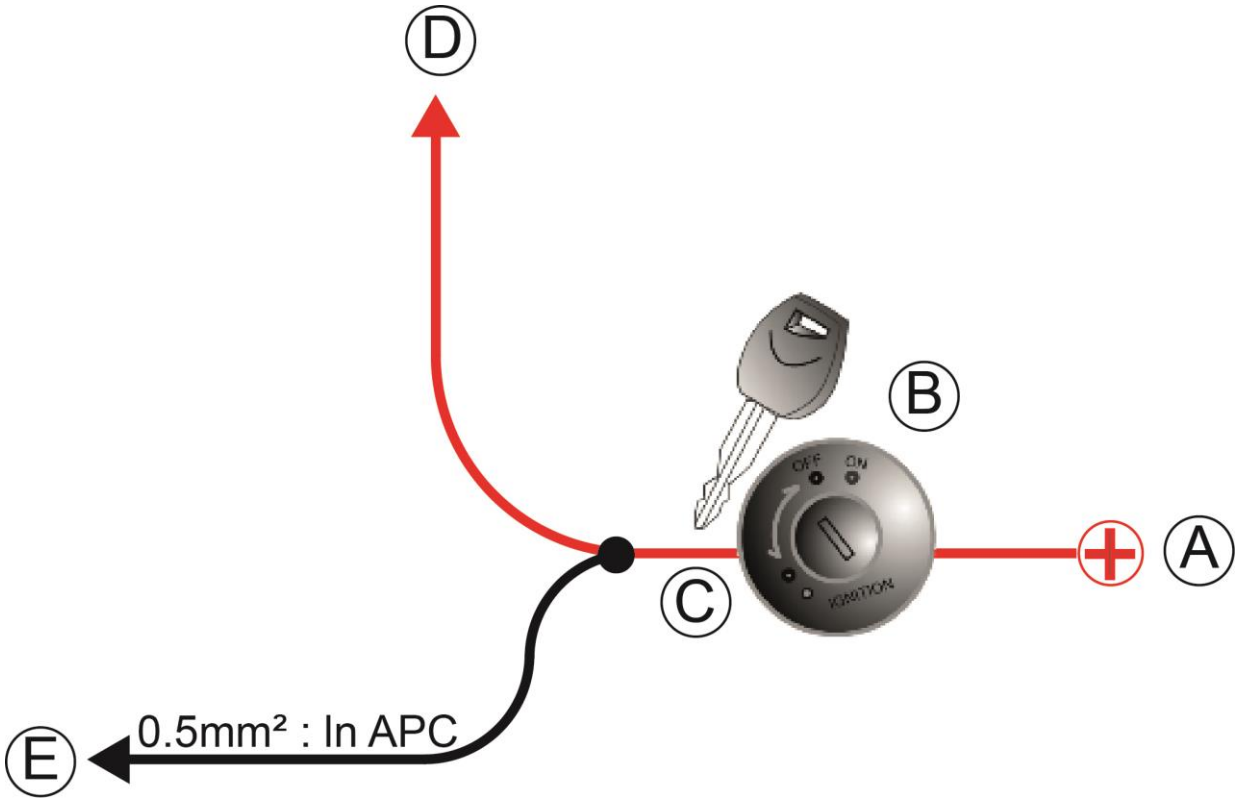
The information input "+APC" is waiting for information "+ Battery". It is activated when the vehicle's key switch is in the "CONTACT" position.

When this information is activated :
The system wakes up
It is not possible to switch off the system using the system stop button.

When this information is inactive (ignition key removed) :
A first time delay is launched to put certain functions on standby.
A second, later time delay will automatically switch off the system.

This feature saves the battery power needed to start the vehicle. Please note that these 2 delays can be set via the secondary menu accessible on the XXL graphic control unit (See User Manual).

Principle :



A. "+ " Battery
B. Vehicle key switch
C. After ignition" output of the key switch
D. Vehicle Original Equipment Bundle
E. Roof assembly wire: "In APC" of 0.5mm².

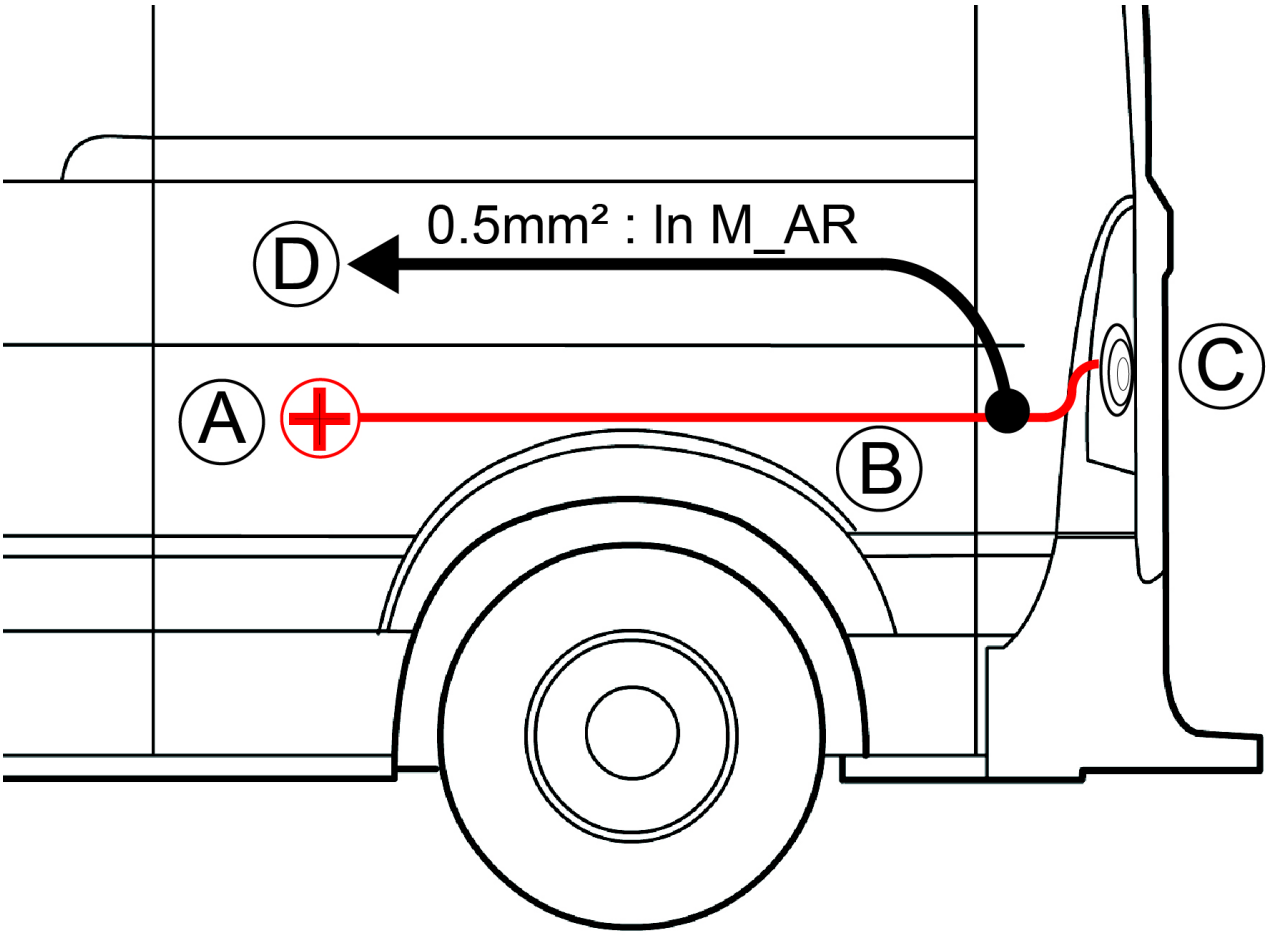
(2**) "Reverse" information input

The information input "Reverse" is waiting for "+ Battery" information. It is activated when the vehicle is in reverse gear.

This function automatically activates the reverse camera mode if the set is equipped with the video option.

Typically, this information is taken from the vehicle's reversing light supply line.

Principle :



A. "+ " Battery
B. Reversing light supply wire
C. Reversing light
D. Wire from the roof assembly: "In M-AR" of 0.5mm².

(3***) Hand Brake Information Input

The information input "Handbrake" is waiting for the information "Battery Mass". It is activated when the vehicle's handbrake is applied.

This function is used to determine whether or not the vehicle is in motion.

- Road service vehicles

When the handbrake is not applied and at least one of the lift-up elements is in the raised position, an audible alarm provided by the graphic control box sounds to warn the user that an element is still in the raised position while driving.
Some temporary work sites or interventions must be carried out in slow progress with the active signalling. This feature can then be inhibited via the secondary menu of the Graphic Control Unit (See User Manual).

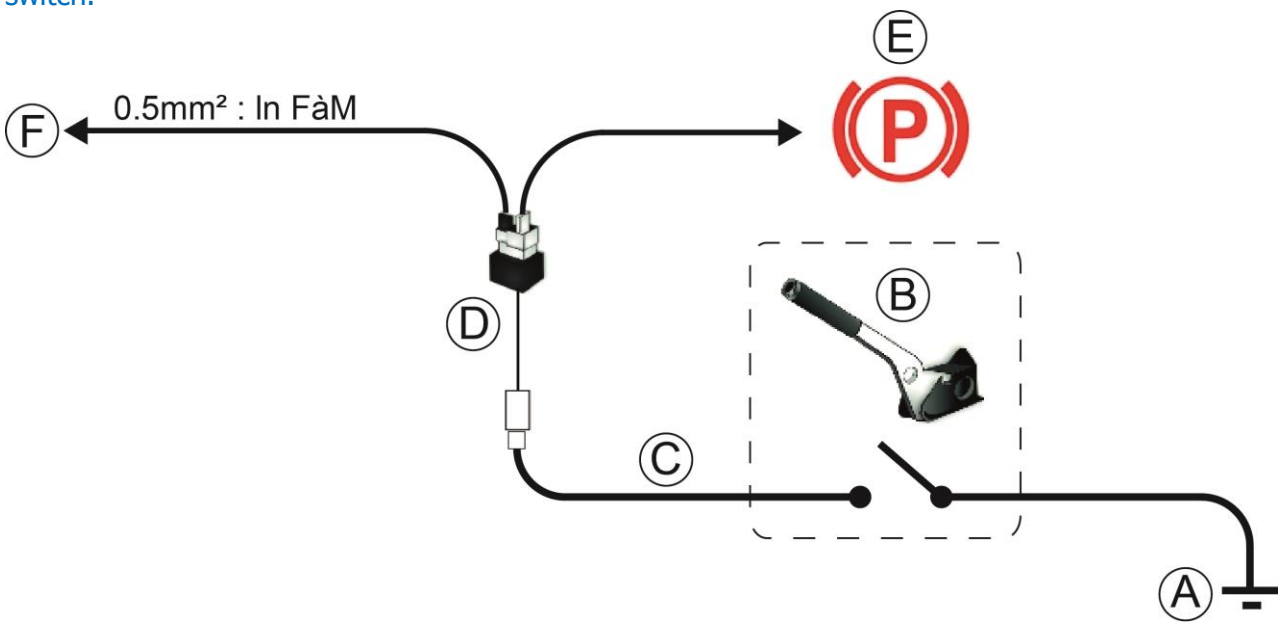
- Priority vehicles

In addition to the functions described in the previous paragraph (Road service vehicles), the handbrake function on priority vehicles allows :

When the handbrake is applied, the penetration lights are automatically deactivated and the amber beaconing is activated.

Releasing the handbrake automatically deactivates the amber beacon and activates the penetration lights again if the blue beacons are active.

This function is wired via a handbrake module (optional) to the vehicle's handbrake switch.

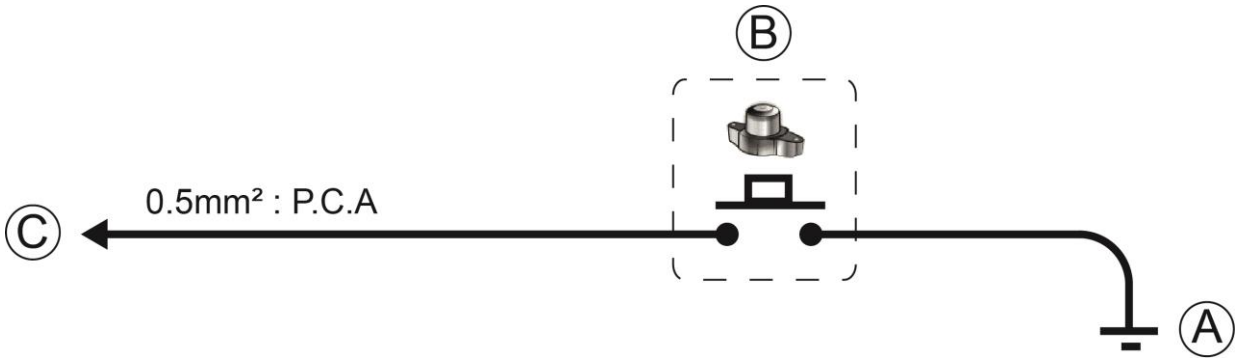


A. Vehicle Hand Brake Switch Circuit Ground
B. Vehicle handbrake and its switch
C. Vehicle handbrake circuit line
D. Handbrake module (MERCURA option)
E. Line from the vehicle's electrical circuit to the dashboard indicator light
F. Wire from the roof assembly: " In FàM " of 0.5mm².

(4****) Pedal Chief of Apparatus "PCA" information input.

Pedal Chief of Apparatus pedal function is a specific function for fire-fighting vehicles which enables the SIRENE function and the blue signalling to be triggered using a specific pedal installed at the passenger's foot (the Chief-of-Arms). Pressing the pedal activates the SIRENE and blue signalling function (if they were not active). When the pedal is released, the SIRENE is deactivated but the blue signal remains active.

The information entry "PCA" is waiting for "Mass Battery" information.



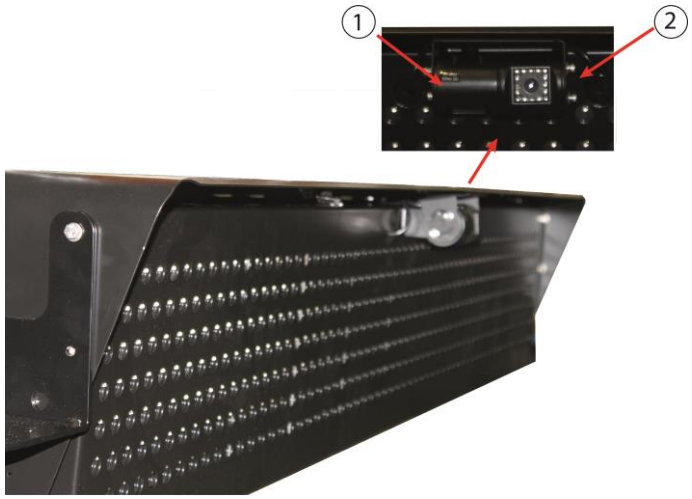
A. Mass of the circuit Pedal Chief of Apparatus
B. Pedal switch of Apparatus
C. Wire from the assembly: "P.C.A" of 0.5mm².

6. VIDEO OPTION

A double camera can be installed in the centre of the top cap of the PMV housing. This dual camera consists of a 2.5mm wide angle 120° focal length camera (Camera no. 1) pointing downwards and an 8mm focal length camera with a 45° viewing angle (Camera no. 2) pointing horizontally.

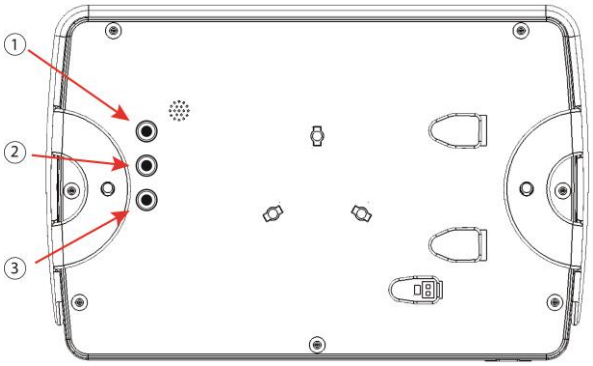
Both cameras also have 15 infrared LEDs each for night vision (0 lux).

The screen also has a third video input on the CINCH n°3 base.



1. Camera n°1 / Wide Angle 120° downwards
2. Camera n°2 / 45° angle with horizontal orientation

CINCH connectors (1 to 3 depending on the number of cameras) are available at the end of the PMV beam. Connect these to the sockets at the back of the control box and according to the number of cameras.



1. VIDEO CAMERA CONNECTOR SOCKET N°1
2. VIDEO CAMERA CONNECTOR SOCKET N°2
3. VIDEO CAMERA CONNECTOR SOCKET N°3

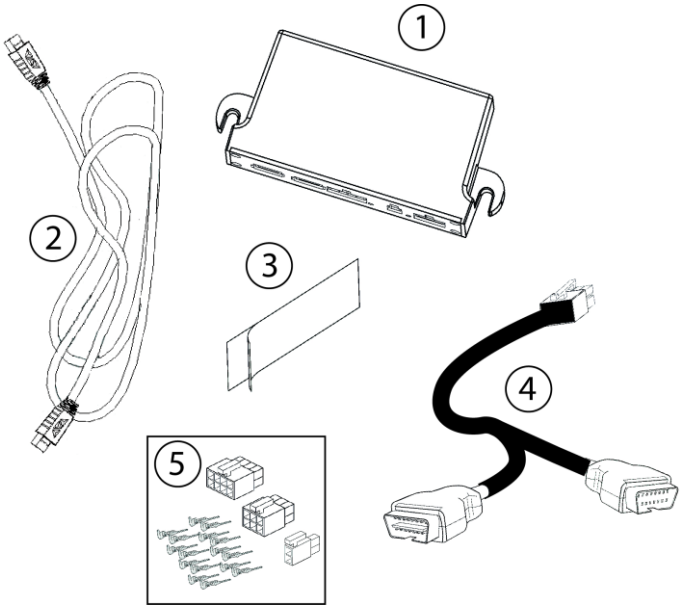
7. TOPOMETER OPTION

The topometer system consists mainly of a BLL MERCURA module. Its function is to measure the distances travelled by the service vehicle and to define "tops" of inter-distances when laying Lübeck cones.

It is a complementary equipment to the MERCURA fairing units of CAN technology installed on the vehicles.

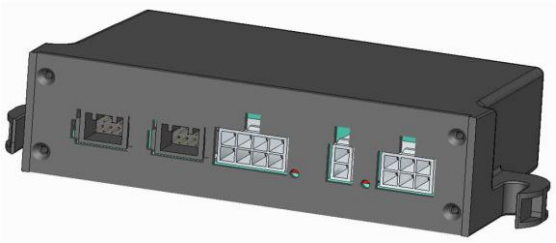
7.1. COMPOSITION

It is integrated on the MERCURA multiplex network between the XXL graphic control box and the roof assembly. Its installation is made easier thanks to a kit composed of :



1. *CAN-CAN Interface Module BLL (27826)*
2. *CAN BUS Beam Length 4.5m (23858)*
3. *Double-sided mounting for Interface Module*
4. *BLL Beam Topometer (30448)*
5. *Connector kit*

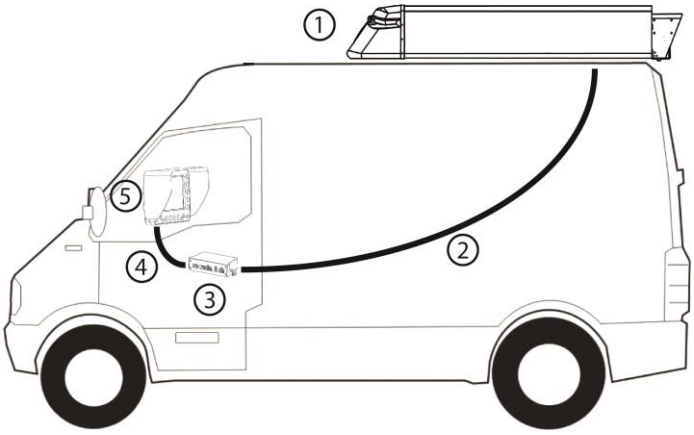
7.2. CHARACTERISTICS OF THE BLL MODULE



- Tension de fonctionnement : 6V à 30V continu
- Consommations : 80mA entre 12,5V et 30V
- Homologation CEM suivant le règlement 10R04 sous le n° "E2 04*11026"
- Température de fonctionnement : -40°C à +85°C
- Poids 40g
- Dimensions lxhxP : 140x33x65

7.3. INSTALLATION ELEMENTS

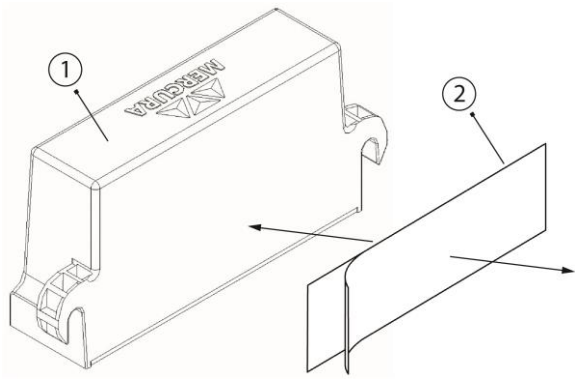
7.3.1. GENERAL OVERVIEW OF THE NETWORK



1. MERCURA roof assembly
2. CAN BUS between the fairing assembly and BLL module
3. BLL module
4. CAN BUS between the BLL module and the XXL front panel
5. XXL facade

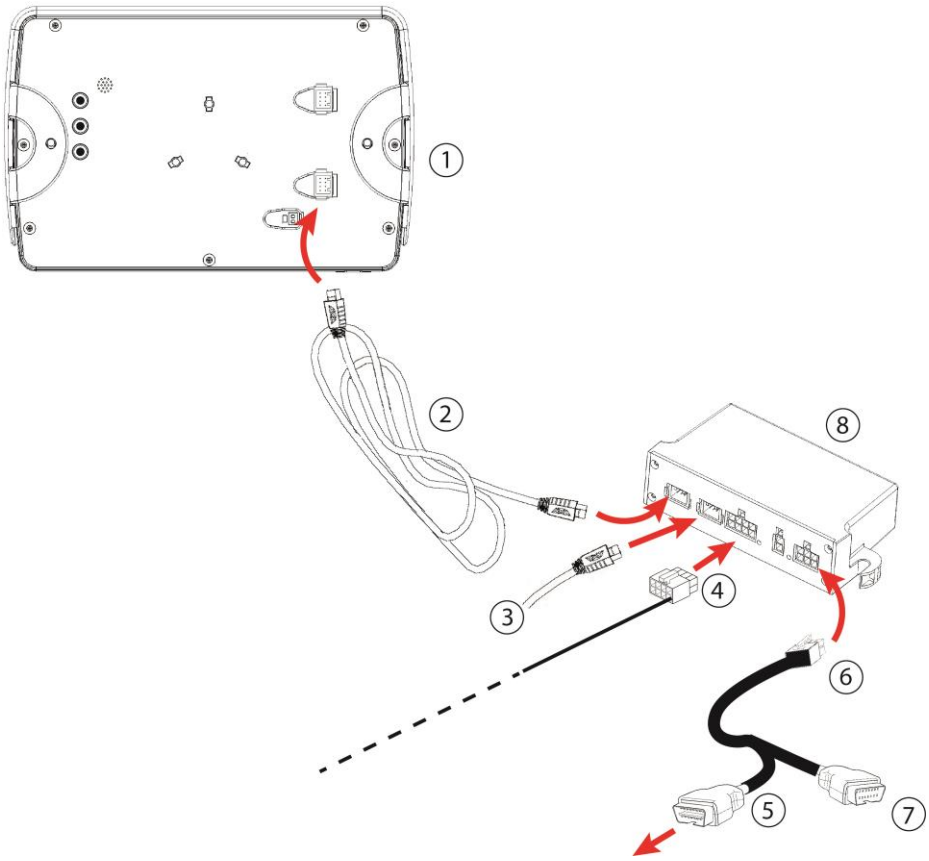
7.3.2. 7.3.2. INSTALLATION OF THE BLL

The BLL interface module can be installed inside the vehicle, behind the dashboard or in the glove compartment, using the double-sided mounting bracket supplied. The location must be flat enough for the module to be installed. This location must be chosen close to the vehicle's ODB socket so that the beam can connect the 2 elements.



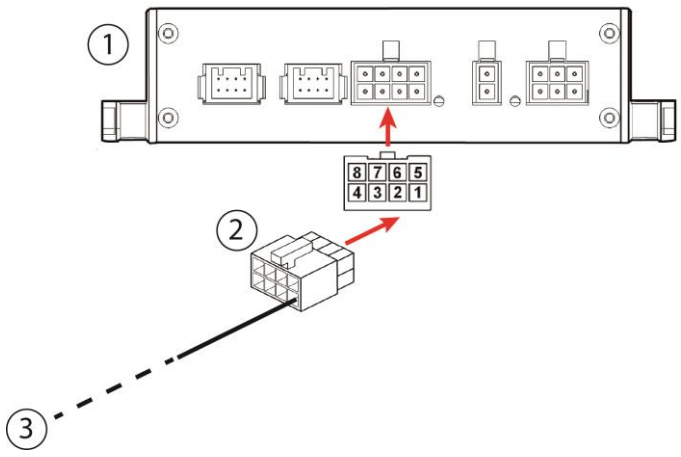
1. BLL interface module
2. Double-sided fixing

7.3.3. INTERCONNECTIONS



1. *XXL control box of the installation*
2. *CAN BUS Beam Length 4.5m*
3. *BUS bundle from the streamlined assembly*
4. *8-way connector for "+APC" connection*
5. *To vehicle OBD connector*
6. *BLL Topometer harness with 6-way connector*
7. *OBD connector available for diagnostic case*
8. *CAN-CAN Interface Module BLL*

7.3.4. WIRING OF THE "+APC" INFORMATION.



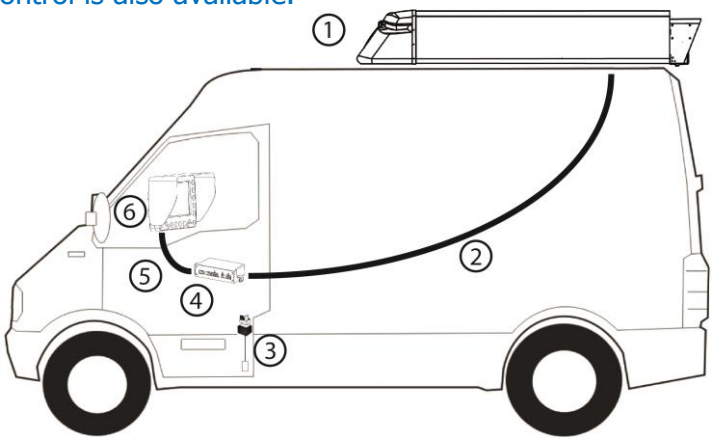
1. *BLL module*
2. *8-way connector*
3. *"+APC" Information to be connected on pin n°1*

8. TOPOMETER AND ANTI-THEFT OPTIONS

In case of simultaneous TOPOMETER and ANTIVOL options, the BLL module referred to in the previous chapter is replaced by a BLM module. The BLM can also be installed if the ANTIVOL option only is present.
The BLM-CAN interface is an "Engine Linkage Block" which interfaces with the key switch of a vehicle in order to ensure the Anti-Theft and Anti-Starting functions and, depending on the model, the Topometer function.

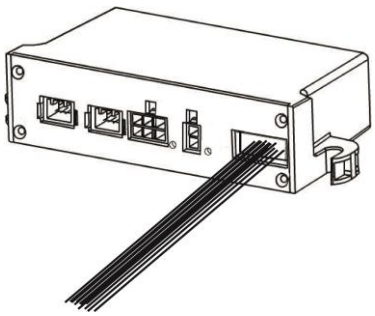
It is an optional system complementary to the MERCURA fairing units. It can be delivered with PRONER or NG1 type connectors from TYCO AMP.

A model with remote control is also available.



1. *MERCURA roof assembly*
2. *CAN BUS between the roof assembly and the BLM module*
3. *Handbrake module*
4. *BLM Module*
5. *CAN BUS between BLM module and XXL front panel*
6. *XXL facade*

8.1. CARACTERISTIQUES DU MODULE BLM



Weight of BLM1: 280g

Supply voltage: 6V to 30V

Consumption :
Product switched off (standby consumption)
- 350 µA for 12V
- 900 µA for 24V

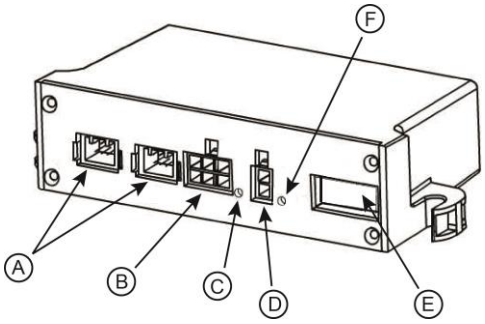
Product in operation
- 250mA max for 12V
- 200mA max for 24V

EMC conformity: "E" marking Regulation R10 n°E2*10R05 11026
Non-waterproof product: Mandatory installation inside the vehicle interior.

Model with remote control

Frequency: 2.4Ghz
Range: 100m
Power supply Remote control: CR2032 3.3V battery

8.2. BLM CONNECTION DESCRIPTION

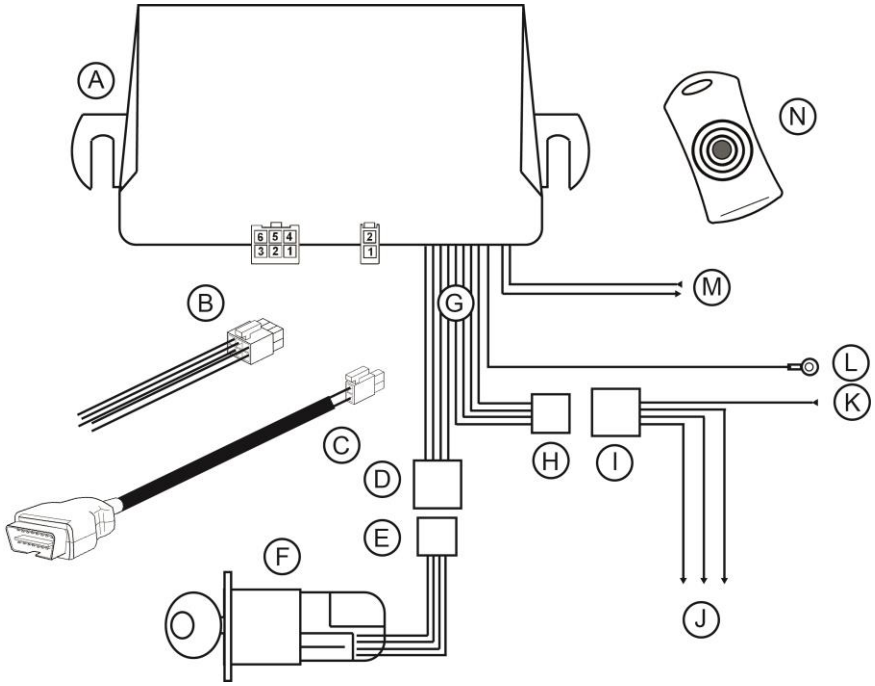


A. BUS CAN BASE
B. 6-WAY SUB-BASE WITH LOGIC INPUTS (LOAD INDICATOR, HANDBRAKE, EXTERNAL CONNECTION...)
C. LED 1: REQUEST AND DELETION REMOTE CONTROL PAIRING RF. RECEPTION OF VEHICLE FRAMES (ON MODEL WITH REMOTE CONTROL)
D. 2-WAY SUBBASE FOR VEHICLE CONNECTION (IF OPTIONAL)
E. WIRED OUTPUTS FOR VEHICLE LOOM INTERFACE CONNECTION.
F. LED 2: RELAY OUTPUTS +ACCESSORIES/ +APC / +LAUNCHER

The colour and flashing of LED2 differs depending on the state of the relays:

- Green flashing : Relay output +ACCESSORS ON
- Fixed green: Relay output + APC ON
- Red: Relay output + LAUNCHER ON

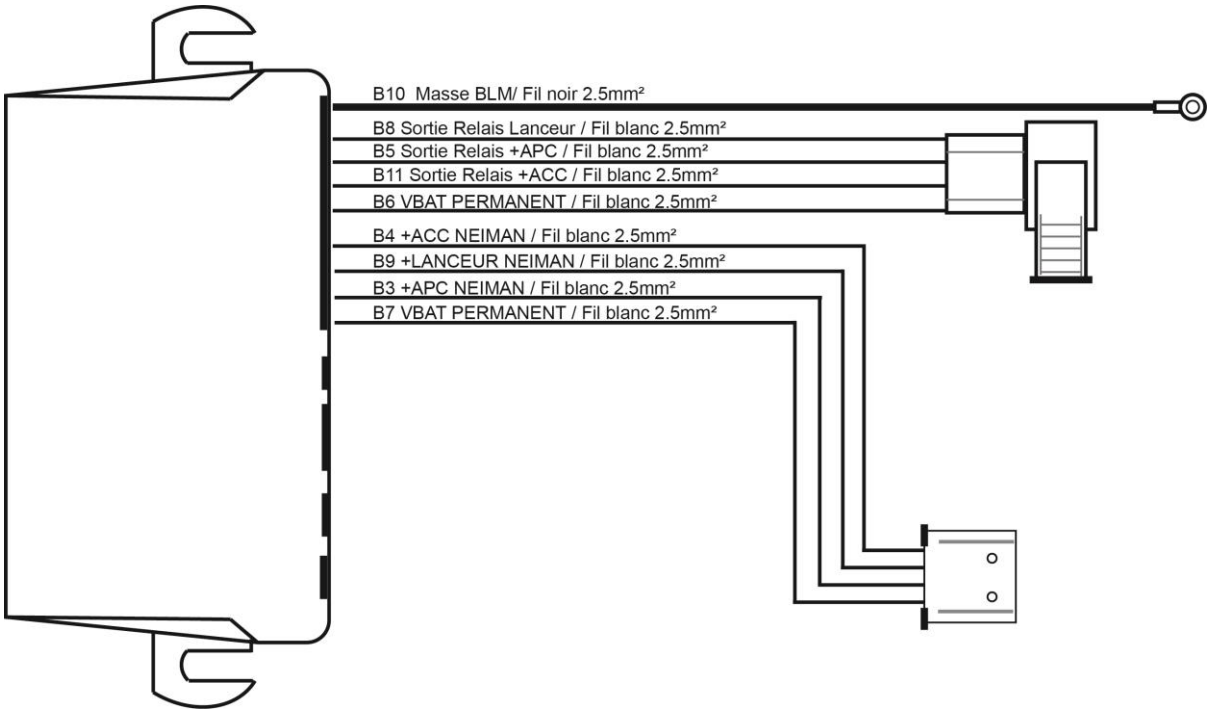
8.3. WIRING DIAGRAM



A. MOTOR CONNECTION BOX (BLM)
B. 6-WAY CONNECTOR FOR LOGICAL ENTRY (+APC; Hand brake information, etc...)
C. BLM LOOM TOPOMETER
D. BLM LOOM TO NEIMAN CONTACTOR
E. PRONER OR NG1 CONNECTOR OF THE NEIMAN CONTACTOR
F. NEIMAN CONTACTOR
G. PRONER OR BLM NG1 CONNECTORS
H. PRONER OR NG1 CONNECTOR BLM START CIRCUIT
I. PRONER OR NG1 CONNECTOR VEHICLE START CIRCUIT
J. LOOM VEHICLE STARTING CIRCUIT
K. CONNECTION TO " + BATTERY " POWER SUPPLY BLM
L. EYE TERMINAL FOR BATTERY GROUND CONNECTION
M. CENTRAL DOOR LOCKING LINK VIA RF REMOTE CONTROL (MODEL WITH REMOTE CONTROL ONLY): SERIGRAPHIC WIRES "B1 RF" & "B2 RF".
N. RF REMOTE CONTROL FOR CENTRAL LOCKING OF THE VEHICLE DOORS (MODEL WITH REMOTE CONTROL ONLY)

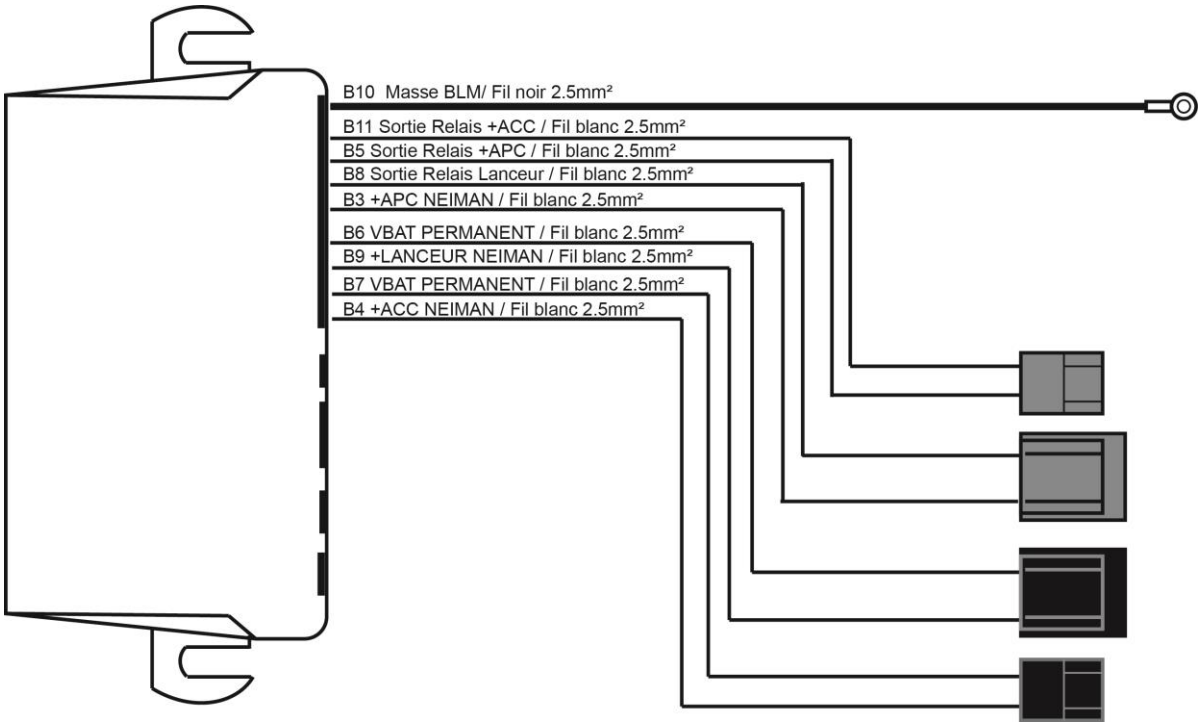
8.4. GENERAL CONNECTION OF THE BLM TO THE NEIMAN WIRING

8.4.1. NEIMAN BEAM WITH TYCO NG1 CONNECTORS



ATTENTION!
Launcher relay output 20A maximum

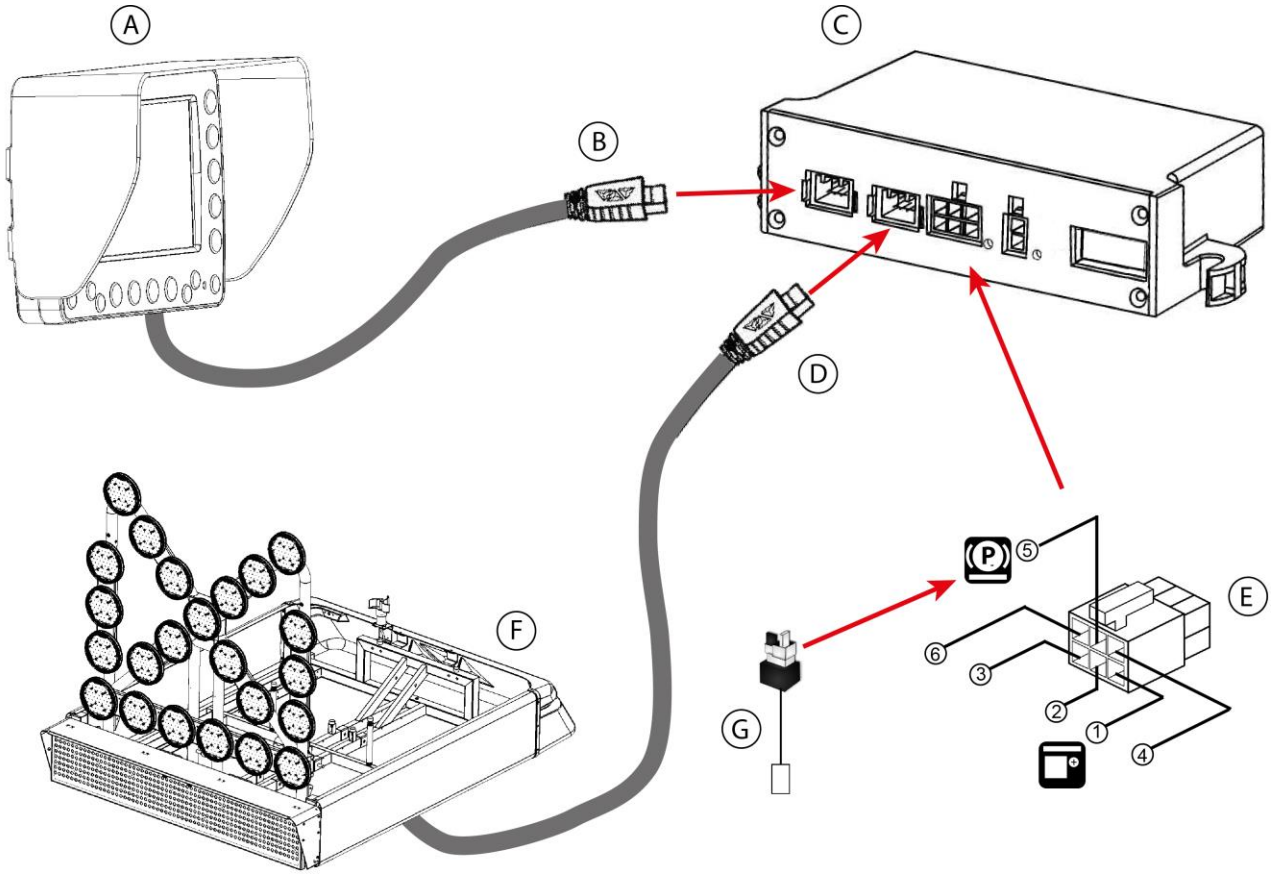
8.4.2. NEIMAN WIRING WITH PRONNER CONNECTIONS



ATTENTION!
Launcher relay output 20A maximum

8.5. ANTI-THEFT FUNCTION

8.5.1. INTER-CONNECTION OF THE BLM TO THE CAN NETWORK



A. CONTROL BOX XXL
B. CAN BUS HARNESS BETWEEN THE CONTROL BOX AND THE BLM
C. MOTOR CONNECTION BOX (BLM)
D. BUS CAN BEAM OF THE ROOF ASSEMBLY
E. INPUTS ON 6-WAY CONNECTOR
    1. *PIN 1: MOTOR RUNNING (ACTIVE AT GROUND OR BATTERY "+").*
    2. *PIN 2: EXTERNAL CONNECTION (ACTIVE ON GROUND OR BATTERY "+").*
    3. *PIN 3: GROUND. TO BE CONNECTED TEMPORARILY TO PIN 6 DURING THE PAIRING PHASE OF THE REMOTE CONTROL (IF MODEL WITH REMOTE CONTROL).*
    4. *PIN 4: ANTI-THEFT PUSH-BUTTON INPUT (ACTIVE ON GROUND OR BATTERY "+").*
    5. *PIN 5: HAND BRAKE INPUT (ACTIVE ON GROUND OR BATTERY "+") FROM THE HAND BRAKE MODULE.*
    6. *PAIRING PUSH-BUTTON. TO BE CONNECTED TEMPORARILY TO PIN 3 DURING THE PAIRING PHASE OF THE REMOTE CONTROL (IF MODEL WITH REMOTE CONTROL).*
F. ROOF ASSEMBLY (ALL TYPES)
G. HANDBRAKE MODULE

ATTENTION

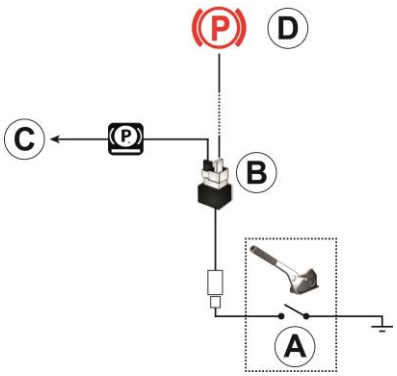
THE ANTI-THEFT FUNCTION REQUIRES THE CONNECTIONS TO BE MADE:

- Pin 1: Rotating motor
- Pin 5: Handbrake input taken from the vehicle via the handbrake module (see chapter below)

The connection of pin 2: External Connection is required on vehicles equipped with an external battery charging connection. This is essential for the ANTI-START-UP FUNCTION.

8.6. HANDBRAKE MODULE

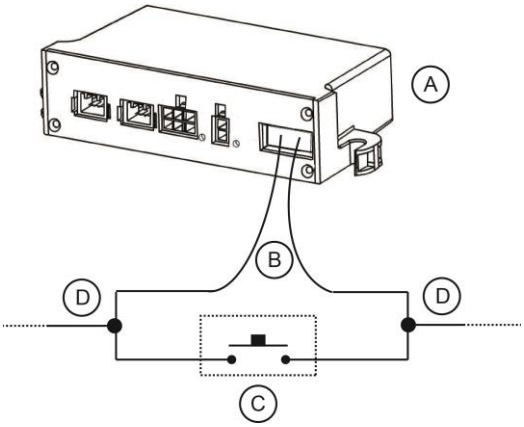
The handbrake module enables the acquisition of the status information of the vehicle's handbrake from the vehicle's switch (vehicles with mechanical handbrake). This collected information must be connected to the dedicated logic input of the BLM.



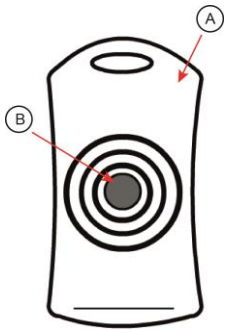
A. Vehicle handbrake switch
B. Handbrake module
C. To BLM Hand Brake logic input
D. To circuit Dashboard

8.7. SPECIFICITIES MODEL WITH RF REMOTE CONTROL

8.7.1. WIRING DIAGRAM CENTRAL LOCKING



A. BLM
B. VEHICLE WIRING HARNESS FOR CENTRAL DOOR LOCKING: WIRES MARKED "B1 RF" AND "B2 RF" (NO PARTICULAR POLARITY).
C. PUSH-BUTTON VEHICLE CENTRAL DOOR LOCKING SYSTEM
D. SPLICE ON CENTRAL LOCKING VEHICLE WIRING HARNESS



A. RF remote control
B. Push button

The BLM option with RF remote control makes it possible to provide a solution for centralised locking of the vehicle's doors while retaining the functionalities of the BLM (Engine Immobiliser).

In order to fulfil this function, the BLM RF is supplied with a dedicated RF remote control.

During the use of this equipment (following the loss of the original remote control for example) it may be necessary to pair a new RF remote control.

8.7.2. PAIRING PROCEDURE

Contact pins n°3 and n°6 of the BLM's 6-way connector for at least 1 second. LED 1 flashes slowly red. For 10 seconds, the BLM is in the remote-control pairing phase. Then press its push-button.

8.7.3. DELETING THE PAIRING

Keep pins n°3 and n°6 of the BLM's 6-way connector in contact for more than 10 seconds. LED 1 flashes red rapidly. The remote control is no longer paired.

8.7.4. USING THE REMOTE CONTROL

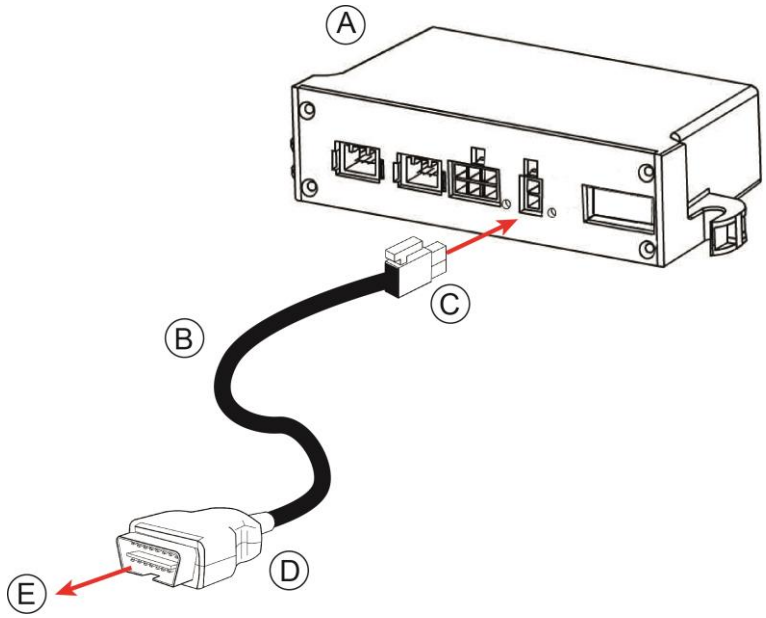
Each press of the remote-control push-button locks or unlocks the vehicle doors if this option has been wired.

8.8. TOPOMETER FUNCTION

8.8.1. CONNECTION OF THE BLM FOR THE SURVEY METER VERSION

ATTENTION!

BEFOREHAND, THE BLM MUST BE WIRED AS IN THE CHAPTER DEALING WITH THE ANTI-THEFT FUNCTION.

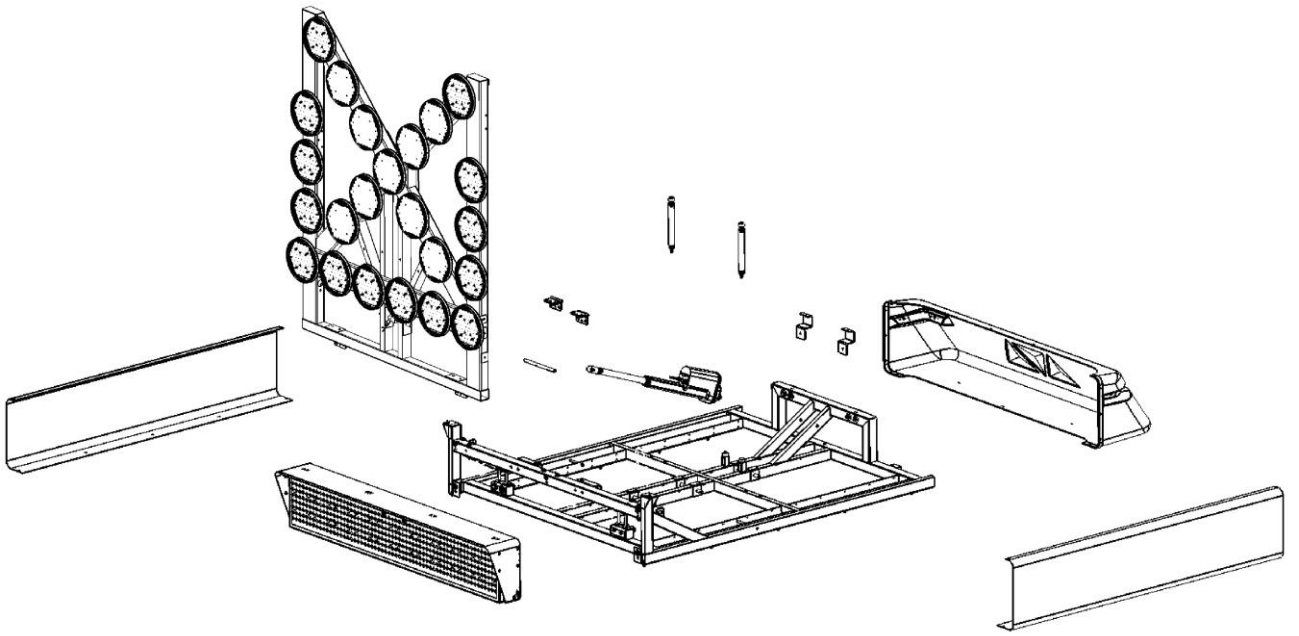


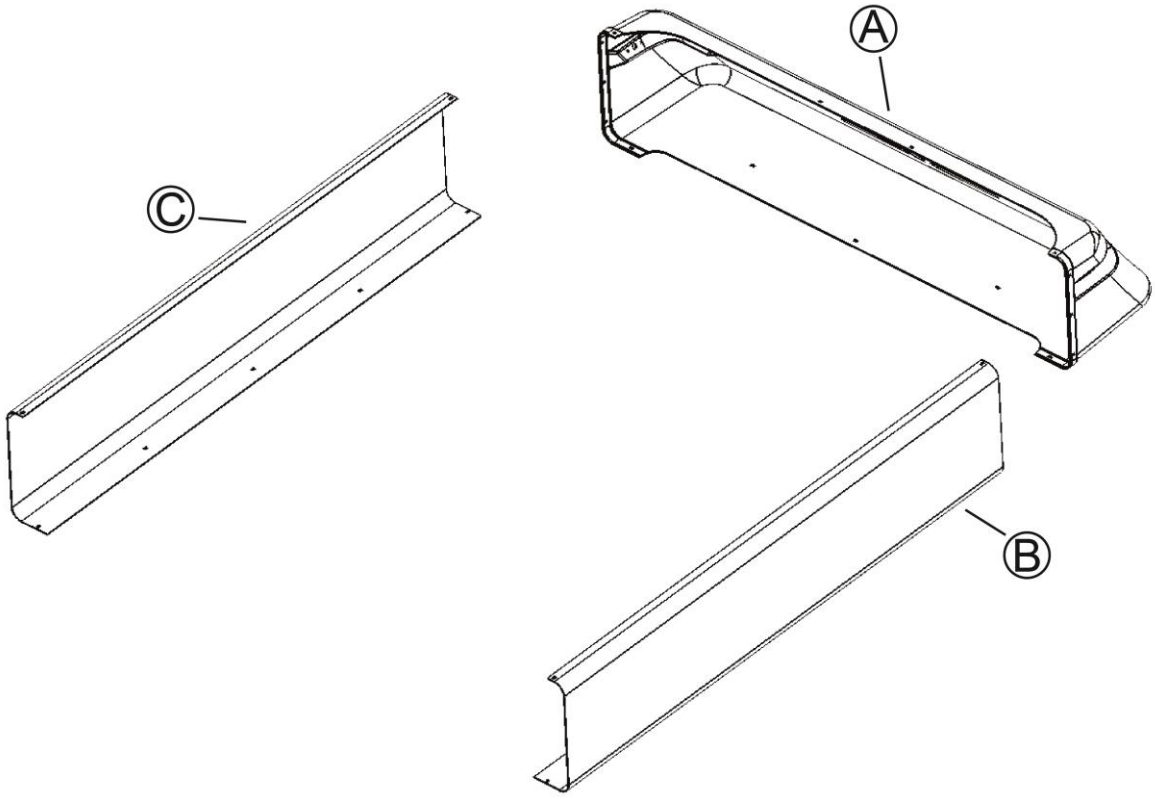
A. BLM
B. TOPOMETER LOOM
C. 2-WAY CONNECTOR TO BE CONNECTED TO THE BLM 2-WAY SOCKET
D. OBD CONNECTOR
E. TO THE VEHICLE'S OBD BASE PLATE

9. PREVENTIVE MAINTENANCE OPERATIONS

Types of operations			
	Weekly	Semi-Annual / 100 000km	Annual
Full functional tests	X		
Verification of conformity with original parts		X	
INTERNAL			
Visual and manual inspection of interior wiring harnesses		X	
Control of the locking of the internal connections		X	
Checking the interconnections with the chassis		X	
Checking the tightness of the frame fixing points		X	
Checking that there are no infiltrations at the fixing points and the roof passage of the wiring harness.		X	
Checking for tears		X	
EXTERNAL			
Visual inspection for cracks on fairings		X	
Complete cleaning of the entire roof assembly		X	
Functional check of the safety stop (if optional)			
Checking the chassis fastenings		X	
Visual inspection of the roof for tears.		X	
Checking the correct movement of the moving parts and the presence of the locking pins.	X		
Visual inspection of the rear cylinder (presence of marks...)		X	
Control of the high and low mechanical stops, front and rear (state, rib...)		X	
Checking the hinges of the rear moving parts.		X	
Visual inspection of the general condition of the FLU and the condition of the light joints		X	
VMP BOX			
Visual and manual inspection of electrical harnesses		X	
Checking the locking of the connections		X	
Checking the box seal		X	
Checking of hinges, movable panel retaining chains and locking pins		X	
Checking for absence of infiltration		X	
Cleaning the inside of the box			X
BY WINTER CONDITIONS			
Cleaning the chassis with fresh water	X		

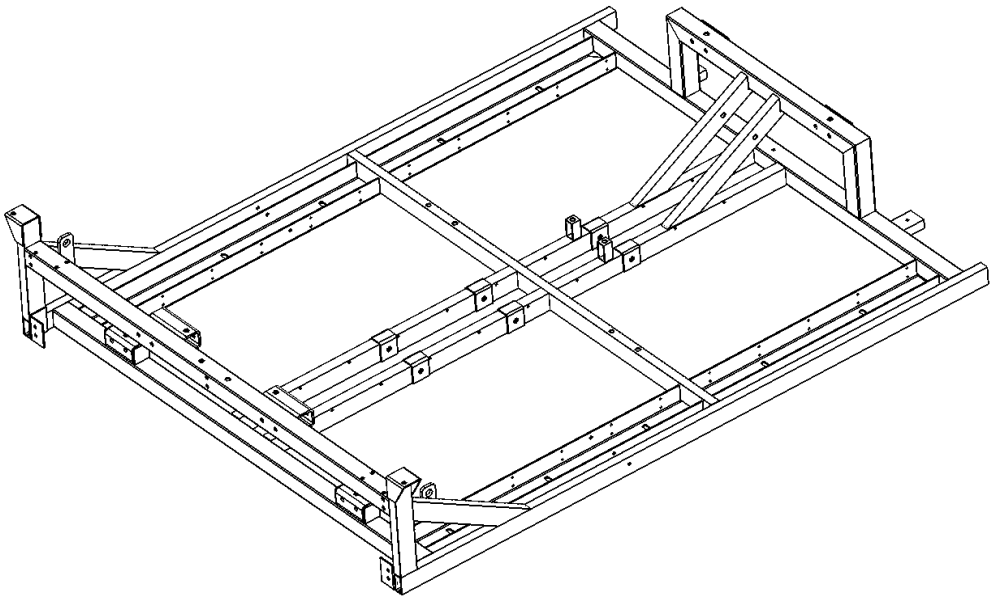
10. SPARE PARTS



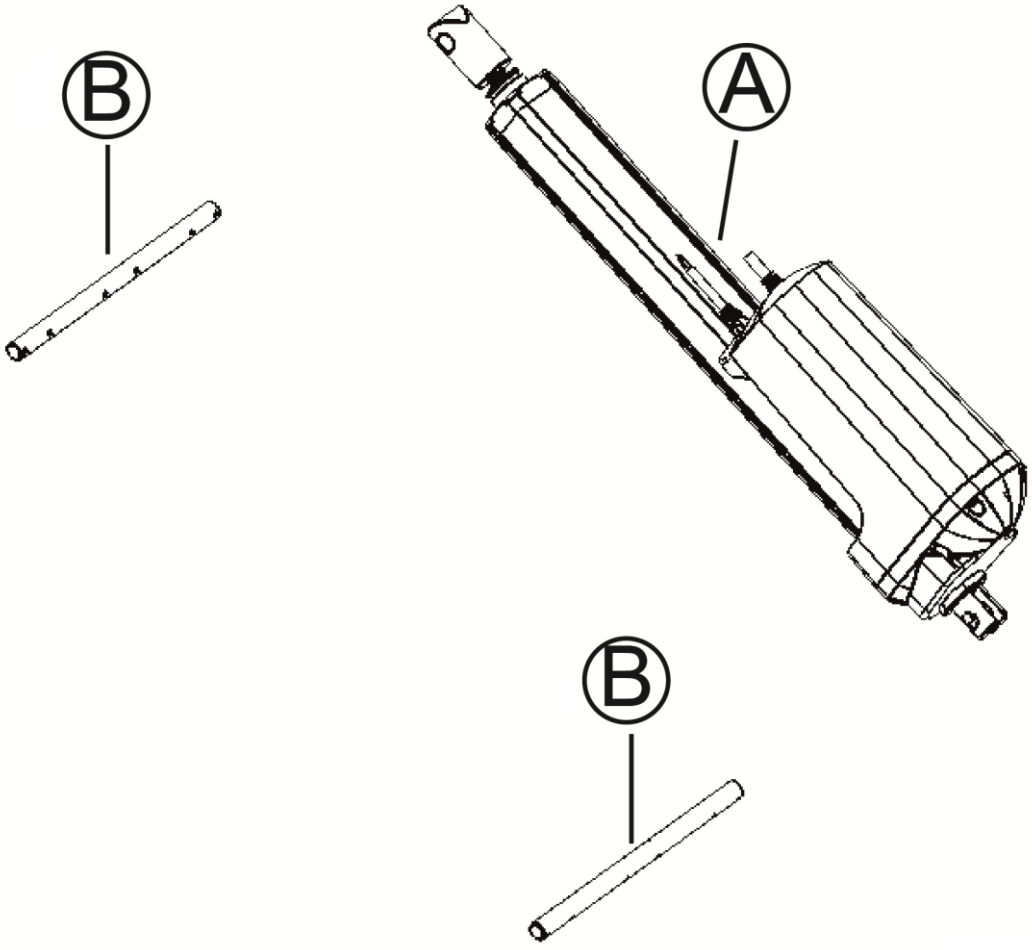


A. FRONT ABS CARENAGE : **26957-00***
B. STRAIGHT FAIRING: **31036-00***
C. LEFT FAIRING: **31037-00***

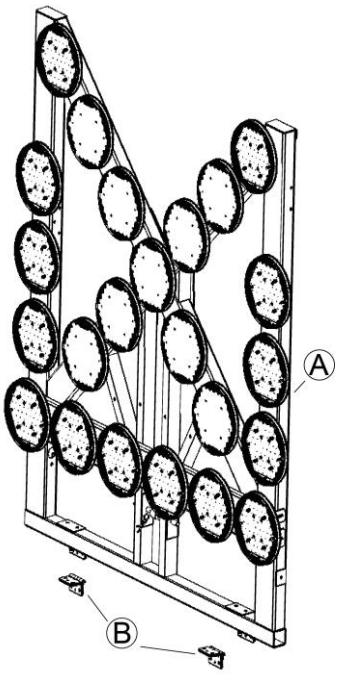
*PRECISE THE COLOUR WITH THE NUMBER RAL



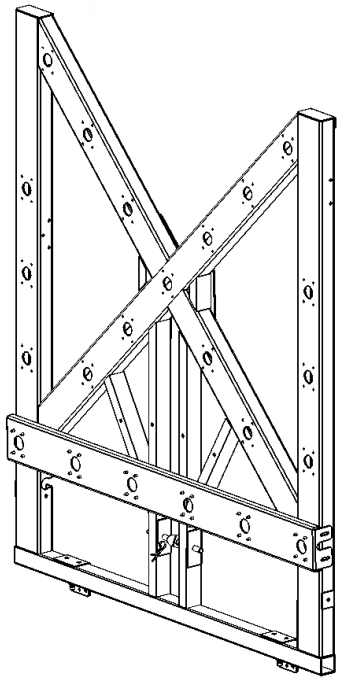
V2018 FRAME L-XL GROSS: **30715-00**



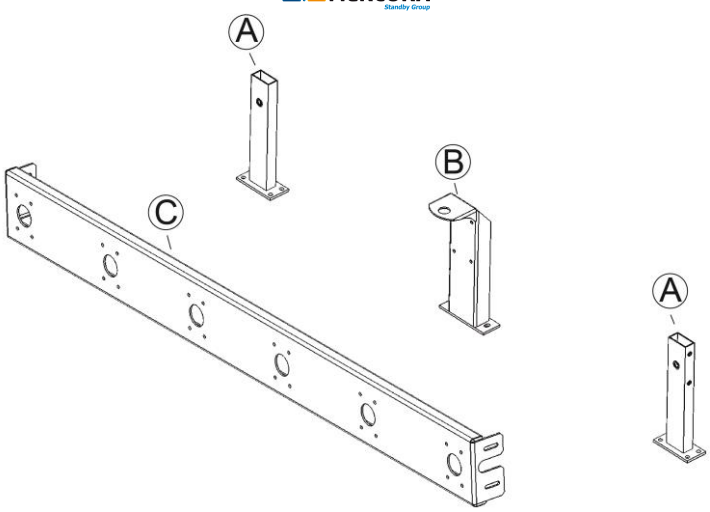
A. REAR LIFTING: ELECTRIC CYLINDER SUB-ASSEMBLY 300mm 12V: **31042-00**
B. AXIS 12,7 LG 176 IN : **22788-00**



A. FLUVIAL SUBASSEMBLY 17 LIGHTS + 6 LIGHTS: **24906-01**
B. HINGE TYPE DOUBLE SHEET: **21399-00**



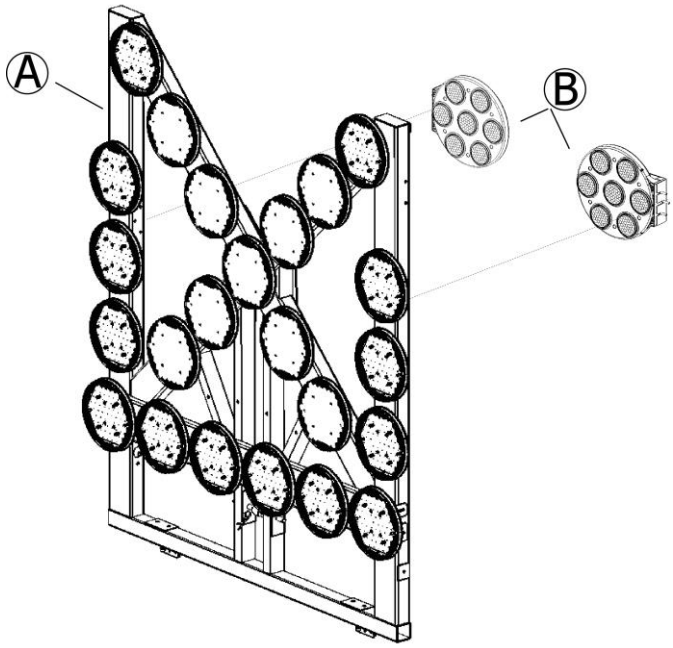
ARROW FRAME : **25733-01**



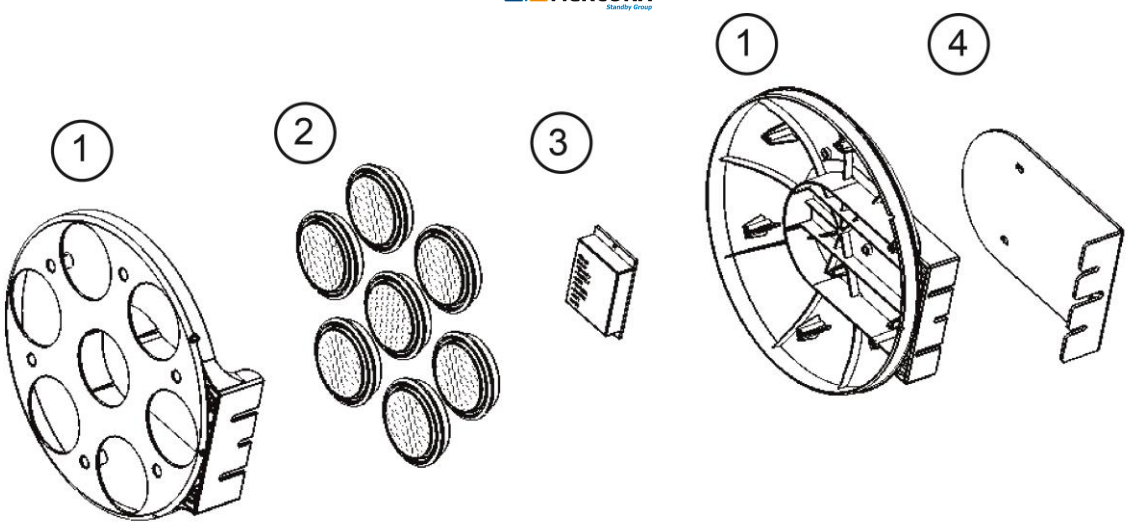
A. PAIR OF MOUNTING BRACKETS KR41: **25734-00**
B. BE LIGHT SUPPORT ON KR41: **25735-01**
C. LIGHT SUPPORT BAR KR41: **27154-00**

12V Ø200 LED AMBER LIGHT: **27961-00**

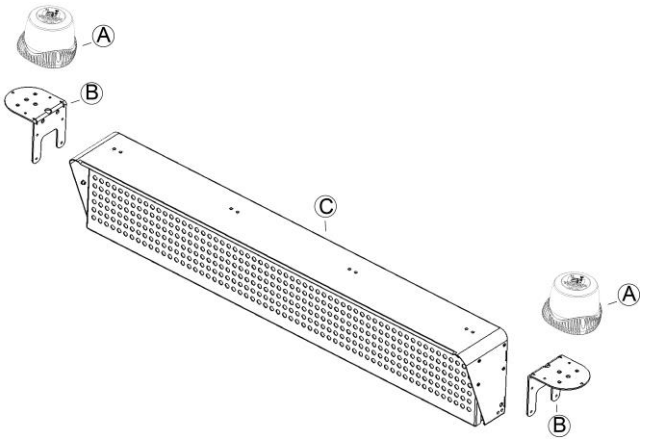
OPTIONAL 300MM WARNING LIGHTS



A. ARROW
B. PAIR OF WARNING LIGHTS 300MM (OPTION): **24925-01**



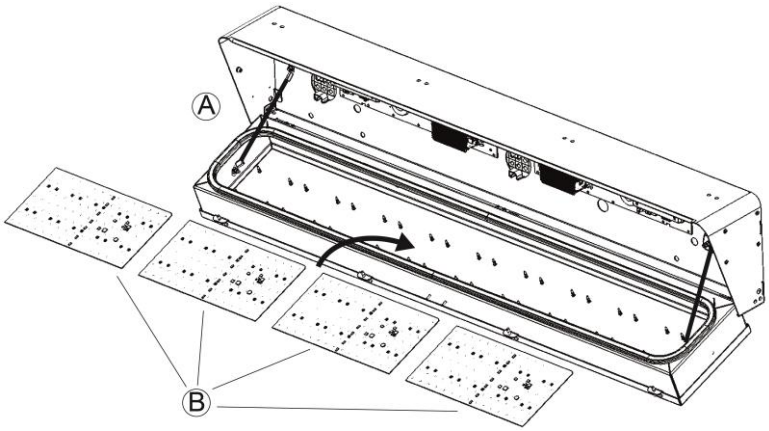
1. 300 MM LAMP BODY FOR 74 MM LAMPS: **25033-00**
2. 74 AMBER FLASH LIGHTS
   a. SET OF 7 LIGHTS 74 LEDS ORANGE FLASHES: **31408-00**
   b. UNIT LIGHT 74 LED ORANGE FLASHES: **19515-00**
3. CENTRAL FLASHING MODULE 300 10/30V LIGHT: **25578-00**
4. FIRE SUPPORT 300 LED : **27817-00**



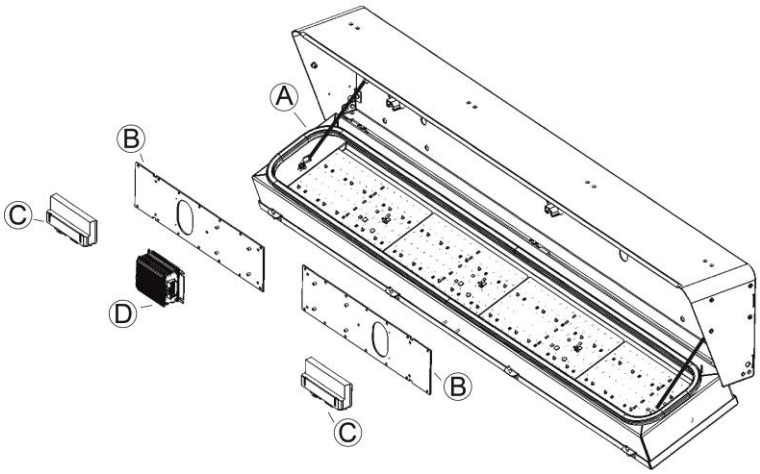
A. Flat base ISO Rotating or flashing amber M80 GYROLED: **30577-00**
B. GYROLED SUPPORT BRACKET: **24941-00**
C. 2 MC CAN 200VMP BOX: **31054-00**

OTHER SPECIAL LIGHTS (ACCORDING TO OPTIONS) :

DESIGNATION	REFERENCE
Amber coloured halogen flashing light 12 Volts on flat base 55W	**15733**
Amber GYROLED M80 12/24 volt rotating or flashing base on pole	**30582-00**
Amber coloured halogen flashing beacon 12 Volts on base pole 55W	**15724**
Blue GYROLED M80 12/24 volt rotating or flashing flat base ISO	**30576-00**
Blue 12 Volt Halogen Flashing Beacon on flat base 55W	**15732**
Blue GYROLED M80 12/24 volt rotating or flashing base on shaft	**30581-00**
Blue 12 Volt Halogen Flashing Beacon on 55W pole mount base	**15723**



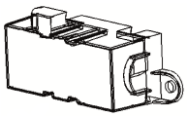
A. 200mm VMP BOX : **31054-00**
B. WIRED CARD PMV200-7L15C: **30086-00**



A. VMP BOX
B. HALF-PLATINUM BOX CAN: **31069-00**
C. MODPUI CCS292 CAN: **27085***
D. MODPUI CCS402 CAN: **26750***

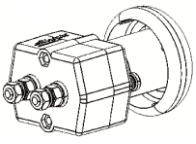
* Specify the reference of the set and the date. This information is written on an aluminium identification plate riveted to the left side of the PMV box.

CONNECTION TERMINAL BLOCK



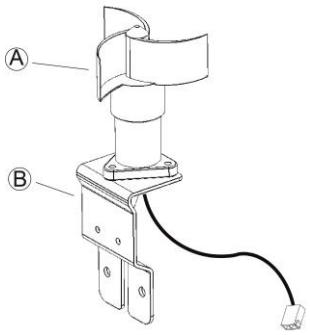
- BORNIER DE RACCORDEMENT FAISCEAU D'ALIMENTATION ELECTRIQUE : **16052-00**

OPTIONAL SAFETY STOP KIT



SAFETY STOP PUSHBUTTON KIT: **31229-00**

ANEMOMETER OPTION

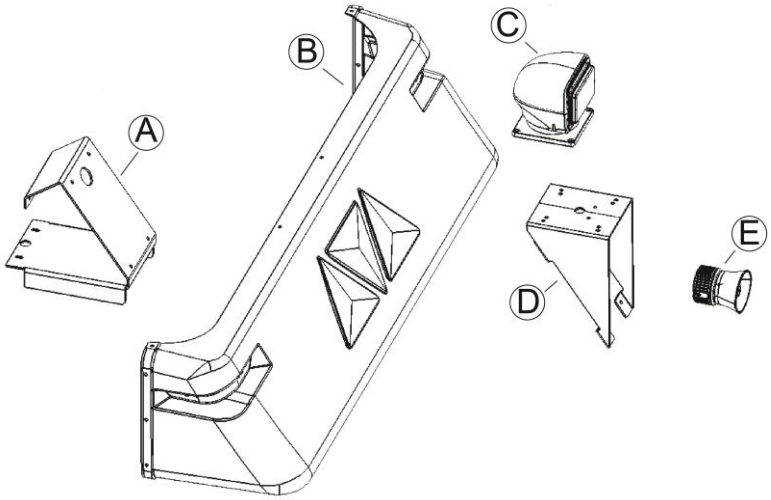


A. ANEMOMETER V2 (OPTION): **21636**
B. ANEMOMETER SUPPORT V3 (OPTION): **27727**
   - COMPLETE SET: **31933**

HANDBRAKE MODULE OPTION

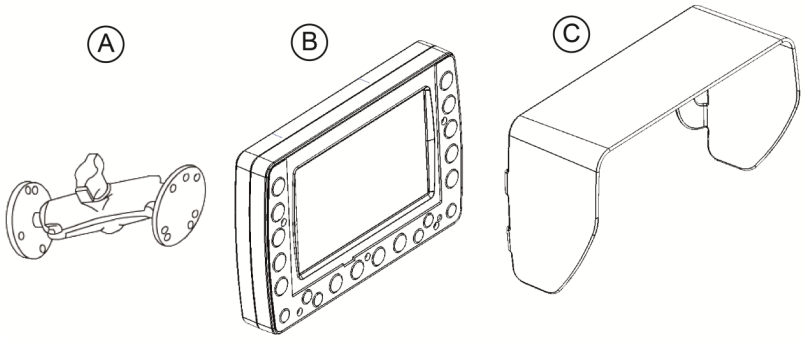
HANDBRAKE MODULE: **20570**

FRONT FAIRING OPTIONS



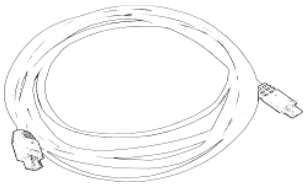
A. SEARCH LIGHT SUPPORT FRAME: **29033**
B. FRONT CARENAGE
C. LASER SEARCH PROJECTOR
   a. MODEL 220 NARROW BEAM: **29369**
   b. MODEL 220 EXTENDED BEAM: **28191**
D. RESEARCH PROJECTOR PLATE: **29109**
E. ASA SOLO TONE MP5 SIREN: **30030**

XXL TOUCH-SENSITIVE GRAPHIC CONTROL PANEL



A. ARTICULATED ARM SCREEN FIXING: **25673**
B. XXL CONTROL PANEL : **29942**
C. VISOR SCREEN XXL CAN (OPTION) :**25201**

*** Specify the reference of the set and the date. This information is written on an aluminium identification plate riveted to the left side of the VMP box.**



10m BUS CAN cable: **23860**