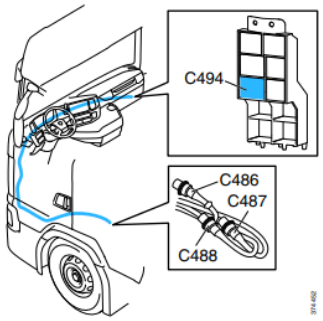
Bodybuilder Quick Reference Guide – Electrical Interfaces

In this document we have collated several useful pieces of advice for mechanically interfacing with a Scania chassis. Where relevant we have linked to the Truck Bodybuilder Instructions, but should you have further questions please feel free to contact us.

Electrical chassis interface

Cable harness from cab to frame (variant family 2411)

The signals from the bodywork console are lead out to bodywork functions on the chassis frame by means of a cable harness. The cable harness runs from connector C494 in the bodywork console to 1, 2 or 3 DIN connectors on the frame (close to the front left mudwing). The number of DIN connectors depends on how the vehicle was specified from the factory. The DIN connectors are located behind the left-hand front wheel, see illustration. All DIN connectors are 7-pin and marked according to the table.

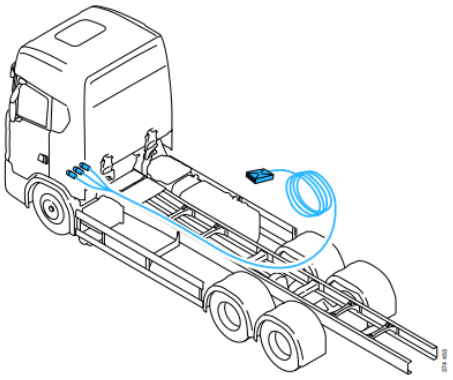


Number of DIN connectors	Pins	Variant code	Marking
1	7	2411B	C487
2	7+7	2411E	C486 and C487
3	7+7+7	2411F	C486, C487 and C488

Extension cable harness on the frame

Additionally, it is possible to order multi-core extensions for each of DIN connectors C486, C487 and C488 in 2m, 8m and 12m lengths. When the truck is ordered with a factory-fitted extension cable harness, an ADR-classed junction box is included.

The extension cable harness and junction box are not connected when the truck is delivered. The cable harness and junction box are located in the cab for transit.

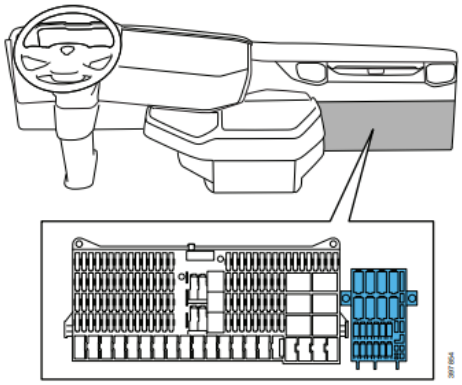


Extension Harness	Length	Variant code	Description
Extension cable harness on the frame	2 m	3023A	Complete with ADR junction box if ordered ex-factory
	8 m	3023D	
	12 m	3023C	

These options can be specified at point of chassis order – please advise your Scania Sales contact to add the relevant code if required. For more information, see TBB Instruction document: https://til.scania.com/w/bwm_0001083_01

Power and Ground - connection to chassis.

Power for bodywork - Low current consumption



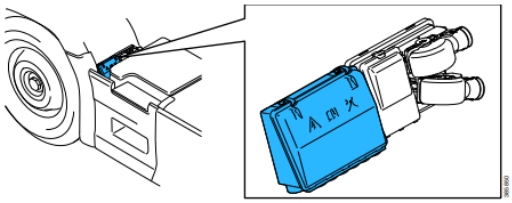
Ideally, use the bodywork central electric unit P9 for the power supply to bodywork functions. The maximum permitted power output from the bodywork central electric unit is a total of 90 A. The power output is split between the following types of power supply:

- 15 voltage: The maximum permitted power output is a total of 30 A for fuses F7-F12.
- 30 voltage: The maximum permitted power output is a total of 60 A for fuses F1-F6.

Further details on the P9 electrical unit are given in the following TBB instructions:
https://til.scania.com/w/bwm_0001046_01

Power for bodywork - High current consumption

If a greater power output is required than the bodywork central electric unit is dimensioned for, a power supply must be taken from chassis central electric unit P11, position designation P11-F, which has a maximum permitted current draw of 250A.



The chassis central electric unit P11 is positioned on the chassis between the battery box and left-hand front mudguard.

The chassis central electric unit P11 is a central electric unit for the vehicle's main fuses, and it is positioned behind the left-hand front wheel, see figure. The fuses are of mega fuse type, rated between 40 A and 250 A. In the chassis central electrical unit, there is an option to connect large current consumers.

Cable harnesses from, for example, the batteries, starter motor and any bodywork functions are connected to the chassis central electric unit. For bodywork functions, connection point P11.F is usually used, but no fuse for these comes factory-supplied. The fuse is fitted by the bodybuilder.

If the P11.F connection is in use, the following connection positions can be used for bodywork functions, if the positions are available:

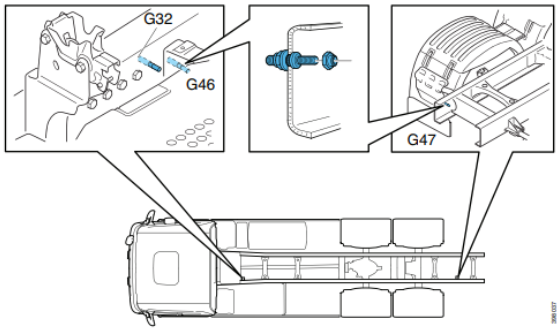
- P11.G
- P11.J
- P11.K
- P11.L
- P11.M

Further details on the P11 electrical unit are given in the following TBB instructions:
https://til.scania.com/w/bwm_0001157_01

Grounding on frame

The chassis has two ground connections for bodywork functions, G46 and G47. The ground screws are designed with an external M10 thread on the screw flange. This makes it possible to connect cables without loosening the screw from the frame side member.

The battery ground screw, G32, must never be used for grounding of bodywork functions.



- *G46 is positioned on the inside of the left-hand frame side member, behind the battery box.*
- *G47 is positioned on the inside of the left-hand frame side member, behind the rear pair of wheels.*
- *The battery ground screw, G32, is positioned on the outside of the left-hand frame side member, in front of G46.*

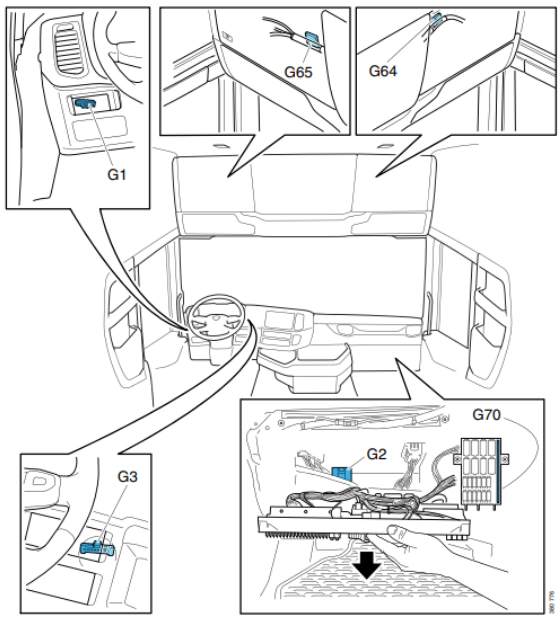
All grounding for bodywork functions on the chassis frame must be connected to the left-hand frame side member. Grounding in the right-hand frame side member will cause voltage drops.

When it is not possible to use the regular ground connections intended for bodywork functions, an additional ground connection can be installed in a more suitable location in the left-hand frame side member. Scania ground screw (part number 2 261 990) must always be used and the relevant instructions followed.

Grounding in Cab

Ideally, use the ground connection in the bodywork central electric unit for grounding in the cab. The ground connection is designated G70 and the maximum permitted current is 90 A.

Additionally, the cab has five junction blocks for ground connection. Depending on vehicle configuration, some ground connections may be occupied. The maximum permitted load per junction block is 6.4 A. The maximum permitted total load for all junction blocks is 32 A.



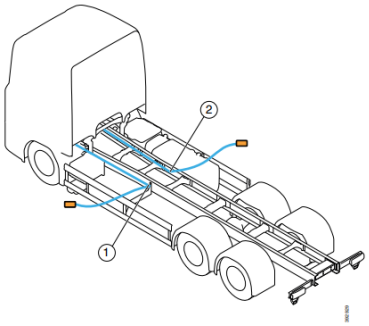
- Use the junction blocks G1, G2 and G3 if ground connections are required behind the instrument panel.
- If ground connections are required in the roof shelf use the junction blocks G64 and G65.

Further details on the power supply and grounding are given in the following TBB instructions: https://til.scania.com/w/bwm_0001038_01

Mounting additional side marker and tail lamps

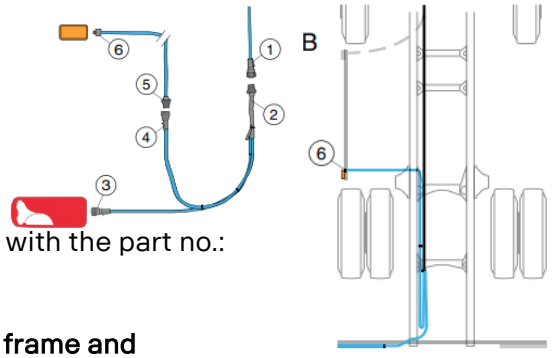
Additional Side Marker lamps

Additional Scania side marker lamps may be fitted in the following ways:



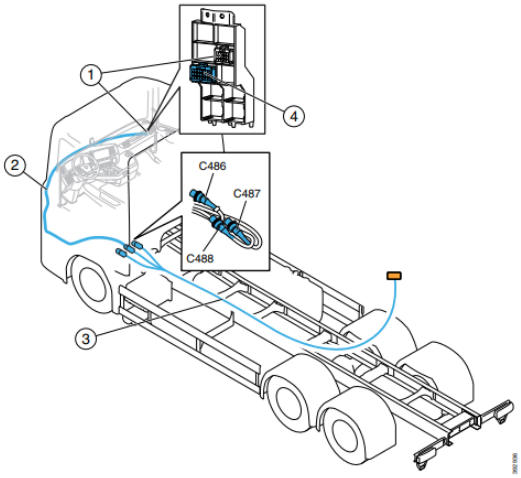
- **Connection via connector C450:**
  For vehicles manufactured as of 2017-03-03, additional side marker lamps can be connected directly via connectors C450-1 (1) and C450-2 (2), located in the frame side members. Signal/+24 V is taken from position 7 or 8. Ground is in position 16. Minimum permitted cable cross section is 0.75 mm².
  Side marker lamp fitted by bodybuilder.

- **Connection via the standard tail lamp connector:**
  Vehicles without Direction indication in side marker lamps (variant code 7176Z) can be supplemented with additional side marker lamps by connecting them to the tail lamps via an extension cable harness for additional tail lamp. This additional Y-cable is available from Scania with the part no.: 1858746



- **Connection via Cable harness from cab to frame and Extension cable harness on the frame:**
  Vehicles without Direction indication in side marker lamps (variant code 7176Z) with the preparation Cable harness from cab to frame (variant family 2411) and Extension cable harness on the frame (variant family 3023) can have additional side marker lamps connected directly to Extension cable harness on the frame.

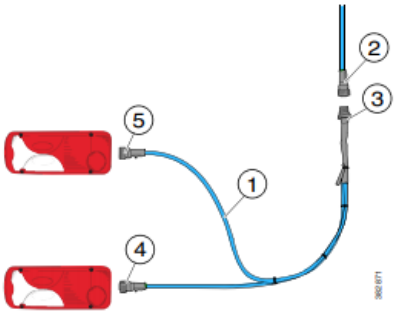
  This involves taking a signal from position 13 in connector C489 (1) in the bodywork console, see illustration to power the side marker lamps, and supplying it via connector C494 (4) which via the option Cable harness from cab to frame (2) leads the signals out to the DIN connectors behind the left-hand front wheel. The optional extension cable harness on the frame (3) can then be used to run the supply to the additional side marker lamps.



Further details on fitting additional side marker lamps are given in the following TBB instructions: https://til.scania.com/w/bwm_0001089_01

Additional tail lamps

Additional Scania tail lamps may be fitted using a simple Y-cable adaptor cable harness for twin tail lamps (1). This additional Y-cable is available from Scania with the part no.: 1858746



Cable harness for twin tail lamps.

Please note the following when fitting additional tail lamps.

- When connecting additional tail lamps, the normal vehicle electrical system and fuses must not be overloaded.
- Any additional cabling must be affixed to prevent chaffing in accordance with Scania TBB instructions.
- Scania tail lamps are only certified and approved for ***horizontal*** mounting.

Further details on fitting additional tail lamps are given in the following TBB instructions: https://til.scania.com/w/bwm_0001141_01

Retrofitting LED tail lamps

Scania advises that the correct Tail lamps should always be specified ex-factory, however a complete tail lamp can be replaced by a LED-lamp and maintain the same operational testing, on condition that Scania parts are used.

Scania tail lamps are only certified and approved for horizontal mounting.

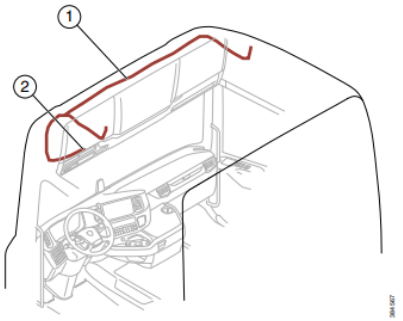
Further details on retrofitting LED tail lamps are given in the following TBB instructions: https://til.scania.com/w/bwm_0001094_01

Retrofitting Rotating Beacons / Beacon Bars

Where it is known that the vehicle will require Rotating Beacons or a Beacon Bar to be fitted, it is always recommended to specify the beacons, or the preparation, ex-factory:

Option	Alternative	Variant code
Rotating beacons	With	1330A
	Preparation	1330B

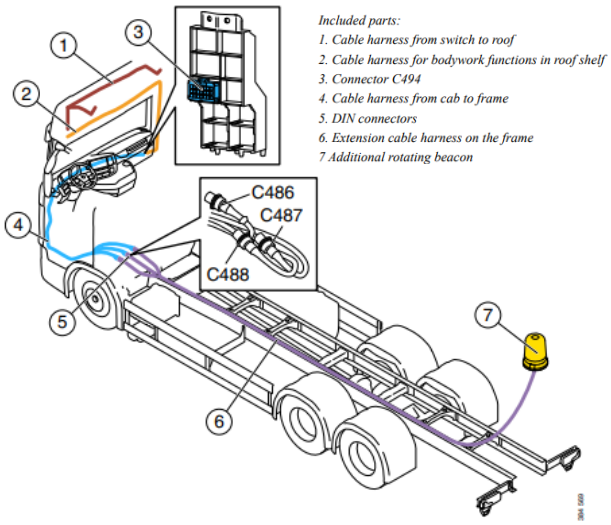
The *Preparation for rotating beacon (variant code 1330B*) is suitable for vehicles where aftermarket Beacons / Beacon Bars are to be fitted. This preparation includes the following:



- Cable harness with connector (1), see illustration
- Lead through hole with sealing plug
- Switch located in roof shelf (2), see illustration.
- Roof rails

An additional *Cable harness for bodywork functions in roof shelf (variant code 3024A)* is fitted as standard to support the pre-installation.

It is possible to connect additional Beacons / Light Bars / Strobes to work off the Scania rotating beacon switch via the following setup:



- Preparation for rotating beacon (variant code 1330B) (1), see illustration
- Cable harness for bodywork functions in roof shelf (variant code 3024A) (2)
- Cable harness from cab to frame (variant family 2411) (4)
- Extension cable harness on frame (variant family 3023) (6)

These options can be specified at point of chassis order – please advise your Scania Sales contact to add the relevant code if required.

For more information, see TBB Instruction document:
https://til.scania.com/w/bwm_0001148_01

BCI – Bodywork communication interface

BCI (Bodywork Communication Interface) is an electric control unit for bodywork functions. BCI manages all logic in the vehicle. The control unit retrieves information from the vehicle's other systems to be able to check if the activation of different functions is permitted.

The BCI is connected to and communicates with the other control units in the vehicle via the vehicle's internal CAN bus. The bodybuilder can activate chassis functions via the BCI. Connection to the BCI is via connectors C259 and C493 and/or body CAN.

It is possible for the bodybuilder to configure which control and information signals that should be allocated to the respective pin. The control unit's pins are therefore not allocated a certain signal or function. The signals available depend on the vehicle's configuration.

Configuration of the interface, and the input dependent logic is done using the Body Interface Configuration Tool (BICT). The tool is integrated in SDP3 but is also available as a stand-alone application. The following information is specified in BICT:

- Which control signal that is to be allocated to each respective physical input
- Which information signal that is to be allocated to each respective physical output
- Which electrical characteristics that should activate an input, for example, if an input is to be activated by +24 V or ground.
- The relationships between signals, such as time delays and extra conditions.

Bodybuilders can program the logic themselves using SDP3 or choose to save the logic project file to upload at PDI. This project file can then be sent to a Scania workshop where the programming of the vehicle's control units is done.

The bodybuilder also has the possibility to use the same BIC project file for more chassis. BICT software can be downloaded from the Scania Bodybuilder Homepage.

Further information on the Bodywork Communication Interface is given in the following TBB instructions:
https://til.scania.com/w/bwm_0001079_01
https://til.scania.com/w/bwm_0001119_01

Tail Lift Prep

Scania offers a pre-installation to facilitate the mounting of a tail-lift as part of the bodybuild. Preparation for tail lift (variant code 3966C) can be fitted at the factory and comprises a cable harness with switches in the cab and connectors inside the rear end of the chassis frame.

The option Preparation for tail lift includes the following:

- Switch S132 for tail lift activation.
- Switch S152 for body interior lighting activation.
- Warning signal1 in the instrument cluster, ICL (Instrument Cluster), which alerts when the tail lift platform is not in the park position.
- Signals for position lamps, rear-facing, located high up on the box.
- Connectors C152, C157, C158 and C159, configured according to the VEHH

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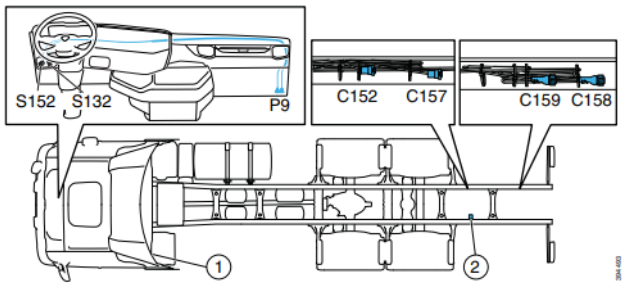


1. Chassis central electric unit, P11
2. Ground screw G54

Cable harnesses for switches and connectors are pre-routed from the factory. The electrical power supply to the tail lift is taken from the chassis central electric unit, P11 (1), and ground screw, G54 (2) is used as electrical ground point, see illustration. The bodywork central electric unit, P9, supplies switch S132 and S152 with 30 voltage. With the inclusion of variant code 3888A, Body builder information in the instrument cluster, ICL, it is possible to view the tail lift warnings in the Instrument cluster.

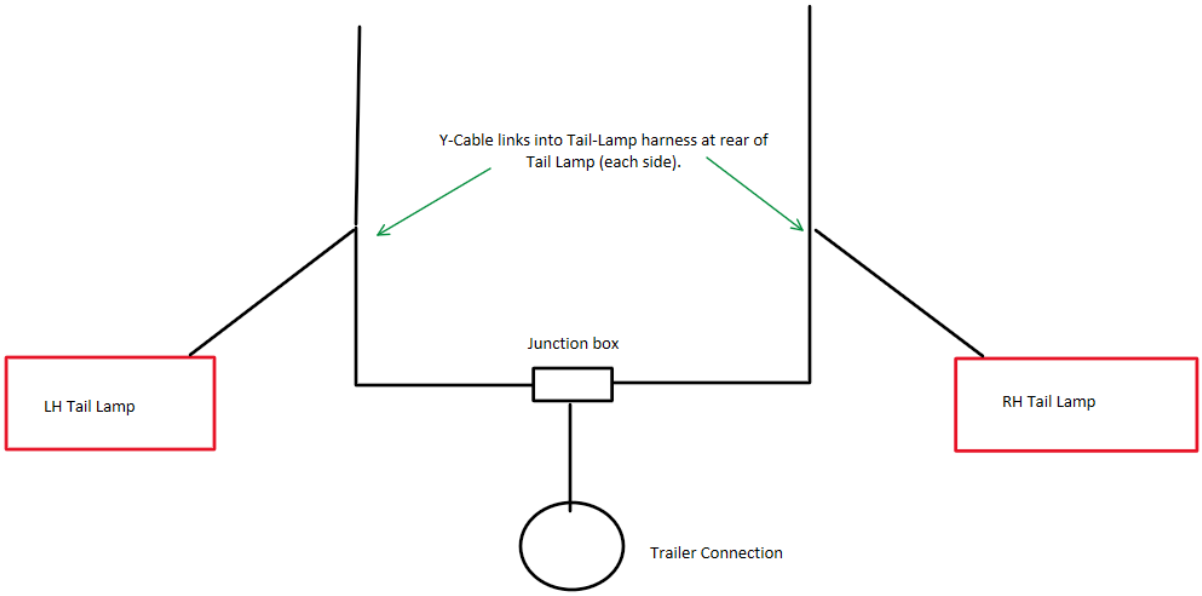
Further information on the Tail Lift Preparation (electrical) is given in the following TBB instructions: https://til.scania.com/w/bwm_0001044_01

For guidance on the mechanical fitment of a Tail-lift, please see the following TBB instructions: https://til.scania.com/w/bwm_0001008_01 or the *Bodybuilder Quick Reference Guide - Mechanical Interfaces* on the TBB GB local page.

Retrofitting a 7-pin electric socket without trailer brakes.

A 7-pin electrical socket for a 3.5t trailer can be easily retrofitted by using a pair of Y-cable adaptor cable harnesses (normally used for twin tail lamps). This additional Y-cable is available from Scania with the part no.: 1858746

The relevant feeds from the Tail-lamp Y-cables should be fed into a junction box, from which the 7-pin trailer connection can connect (see schematic below).



Please note the following when retrofitting a 7-pin electrical trailer socket.

- When connecting additional tail lamps, the normal vehicle electrical system and fuses must not be overloaded.
- Any additional cabling must be affixed to prevent chaffing in accordance with Scania TBB instructions.

Further details on fitting additional tail lamps are given in the following TBB instructions: https://til.scania.com/w/bwm_0001141_01 These instructions may also be of use for bodybuilders who are retrofitting a 7-pin electrical trailer socket.