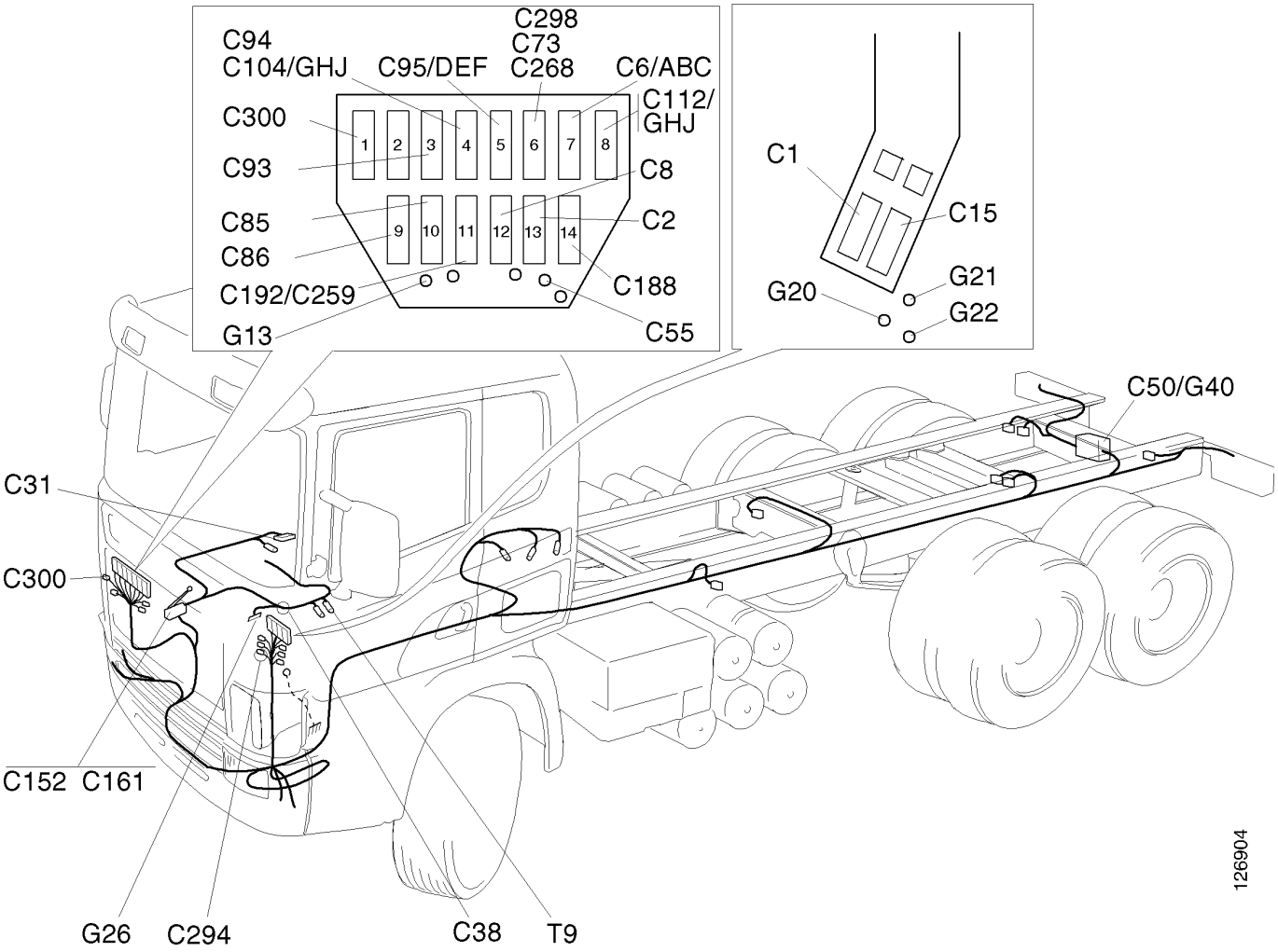
Contents

ELECTRICAL SYSTEM

This chapter provides general information about the electrical system in the Scania 4 series which is relevant to bodywork.

Supplementing this chapter as attachments are *"Manual: Wiring diagram with list of components"* and *"Basic electrical systems"*.
For further information about components, diagrams, etc. contact a Scania dealer.



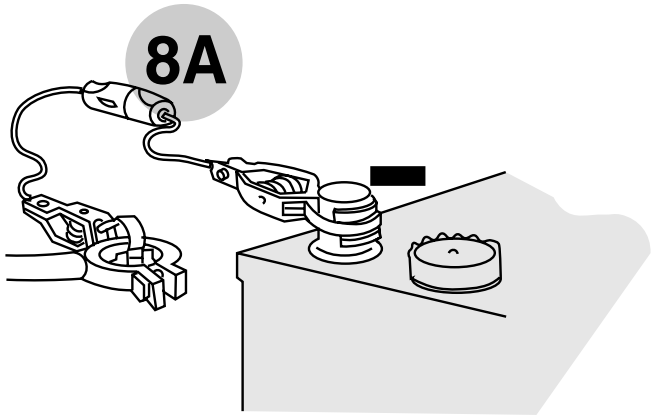
For further information concerning the illustration, see the *"Manual: Wiring diagram" attachment"*.

PROTECTION AND SAFETY REQUIREMENTS

Preventative measures

When working on the electrical system

Detach the battery earth lead and fit a line fuse between the negative battery terminal and the chassis in order to avoid accidents in the case of short circuit.



In and under the instrument panel, close to hot air ducts, temperatures can reach 90 °C. Always use cables which resist at least 105 °C in the cab.

Electronic control units and components for such things as ABS, Opticruise and automatic gearboxes can be sensitive to heat during oven drying after painting and to current during such things as arc welding. Prevent damage as follows:

When oven-drying

See Chapter 2 *"Painting"*

When arc welding

See Chapter 2 *"General recommendations for bodywork"* section *"Welding, general"*.

When charging

Vehicle system voltage must not exceed 30 volts. This means that jump starting should only be carried out using batteries in order to prevent a voltage surge which could damage electronic components.

Protection against transients

Solenoid valves can give rise to high transients when the ignition switch is turned off. For this reason, always use solenoid valves with transient protection.
The electrical system can cope with transients up to 150 V.

Batteries

The batteries should be trickle-charged to avoid deterioration while the vehicle is under bodywork construction.
If the specific gravity of the electrolyte falls too low, sulphation of the lead plates will result and lead to a drastic reduction of battery life and capacity.
See Chapter 2 *"General recommendations for bodywork"* section *"Batteries"*.

CONNECTORS

A standard electrical system contains about 200 connectors of different shape and material.

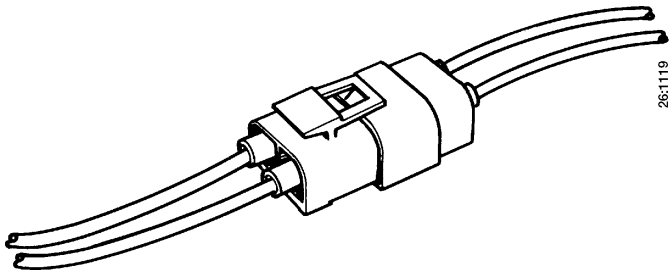
When working on the electrical system, changing or adding components, it is important to use the same types of connector in order to avoid the risk of causing interference.

Many connectors have a double latching mechanism for cable terminals.
It is important to release or secure the double latching mechanism after changing or adding connectors.

Moisture-proof connectiors

The Scania spare parts department can supply a number of different types of moisture-proof connector. Some examples are given below.

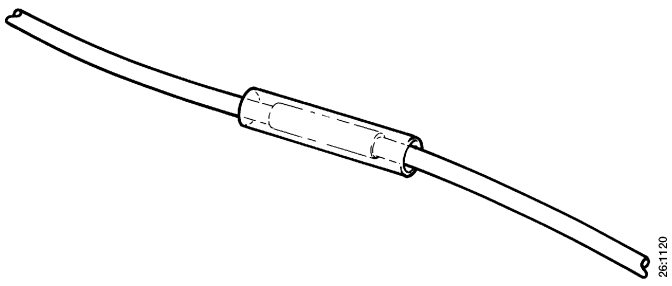
Moisture-proof, moulded connectors with 1 m of 1.5 mm^2 cable.



Part No.
389202 Female connector, 2-pole with cable
389203 Male connector, 2-pole with cable
1117327 Cable with female terminal, red
1117328 Cable with female terminal, black
1117329 Cable with male terminal, red
1117330 Cable with male terminal, black

Splice connector

Use splice connector part No. 341333 for splicing cable 1-2.6 mm^2. This is wound with vulcanising tape part No. 380128 and cover tape part No. 380129.



Alternatively, use a splice connector with adhesive lined heat shrink tubing.

Part No.	1112499	0.75 mm^2
	1112500	2.5 mm^2
	1112501	3-6 mm^2

POWER CONSUMPTION

Batteries, alternator and current consumption must be matched to each other. There should be a charging equilibrium.

Alternator capacity should be matched to current consumption so that battery damage is avoided.

The time aspect is important. The current taken from the batteries must restored within a day or two.

What is the driving cycle like? Frequent starting and lengthy idling periods will not charge up the batteries as efficiently as long-haul runs. The alternator generates less current at low engine speeds.

Some examples are given below.

Engine speed	**Alternator**	
(rpm)	65A (A)	90A (A)
500	30	42
600	40	58
700	46	68
800	50	76
1000	56	82
1200	60	88
1600	64	92

Temperature is also important. A battery is much less able to accept a charge at low temperatures. To achieve charging balance the alternator should have an overcapacity of about 15-25 A. In general, it could be said that an overcapacity of about 15 A suffices for a vehicle driven over long distances without stopping (e.g. long-haul runs) while an overcapacity of about 25 A is needed for a vehicle making frequent stops (e.g. a delivery van).

To check whether the alternator has sufficient capacity, obtain the total current consumption using the tables below and then add the overcapacity.

Note that this is a very approximate calculation.

To avoid shortening the useful life of the batteries, the **radio position** on the ignition switch should be used whenever possible for supplying power. In the drive position the entire electrical system is engaged, which increases current consumption and with it a bigger drain on the battery.

Normal power consumption, truck		
Electric fuel injection	1 x 5 A	= 5 A
Main beam headlights	2 x 3 A	= 6 A
Rear lights	4 x 0.25 A	= 2 A
Front position lights	2 x 0.25 A	= 0.5 A
Width marker lights	2 x 0.25 A	= 0.5 A
Instrument illumination	20-30 x 0.05 A	= 1.5 A
Fan motor	1 x 5 A	= 5 A
Windscreen wipers	1 x 4 A	= 4 A
Air dryer	1 x 3 A	= 3 A
Radio (std)	1 x 2 A	= 2 A
Normal power consumption, trailer		
Rear lights	4 x 0.5 A	= 2 A
Side marker lights	8 x 0.5 A	= 4 A
Width marker lights	2 x 0.25 A	= 0.5 A
Box interior lighting	4 x 2 A	= 8 A

Guide values for extra equipment			
			Operating time
Extra lights	2-4 x 3 A	= 6-12 A	50%
Side marker lights	4-6 x 0.5 A	= 2-3 A	100%
Roof lighting, external	1 x 4 A	= 4 A	50%
Loading lights	2 x 4 A	= 8 A	50%
Electrically-heated seats	2 x 2.5 A	= 5 A	25%
Electrically-heated mirrors	2 x 2 A	= 4 A	25%
Refrigerator	1 x 2 A	= 2 A	60%
Extra cab heaters:			25%
a) Engine cab heater	(Webasto)	= 6 A	
b) Cab heater	(Eberspächer)	= 3 A	
c) Short stop heater		= 4 A	
Retarder (Electric)	1 x 100-200 A	= 100-200 A	5-10 %
Battery heater	1 x 10 A	= 10 A	25-50 %
Tail lift	1 x 100 A	= 100 A	----

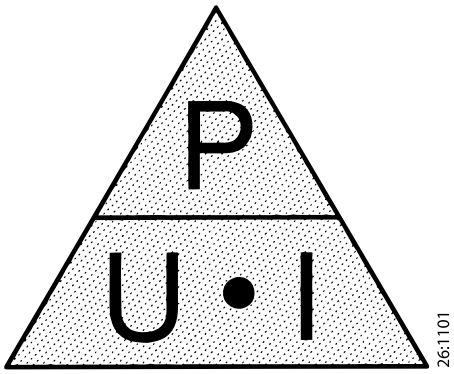
SIZING FUSES AND CABLES AND VOLTAGE LOSS

Calculate how many amps are consumed when extra equipment is connected in order to size the fuses and cables.

Use the following equation:

I = P/U

I = Current in amps (A)
P = Power in watts (W)
U = Voltage (V)



If two of P, U and I are known, the third can be calculated as follows:

U = P/I, I = P/U, P = U x I

Example

Power P = 200 W
Voltage U = 24 V

I = 200 W / 24 V = 8.3 A

The calculated total current through a fuse should not exceed 60 % of the amp rating.

Always use the correct fuse. An oversized fuse can cause fire in the electrical system.

Sizing cables

Current, power and the distance to the load determine the cross-section of the conductor.

Current	Power	Cross-section
10 A	200W	0.75-1 mm^2
15 A	400W	1.5 mm^2
20 A	500W	2.5 mm^2
25 A	650W	4.0 mm^2
40 A	850W	6.0 mm^2
50 A	1200W	10.0 mm^2

Cables outside the cab should be at least 1.5 mm^2

These values are based on the heat generated in the cable with continuous current.

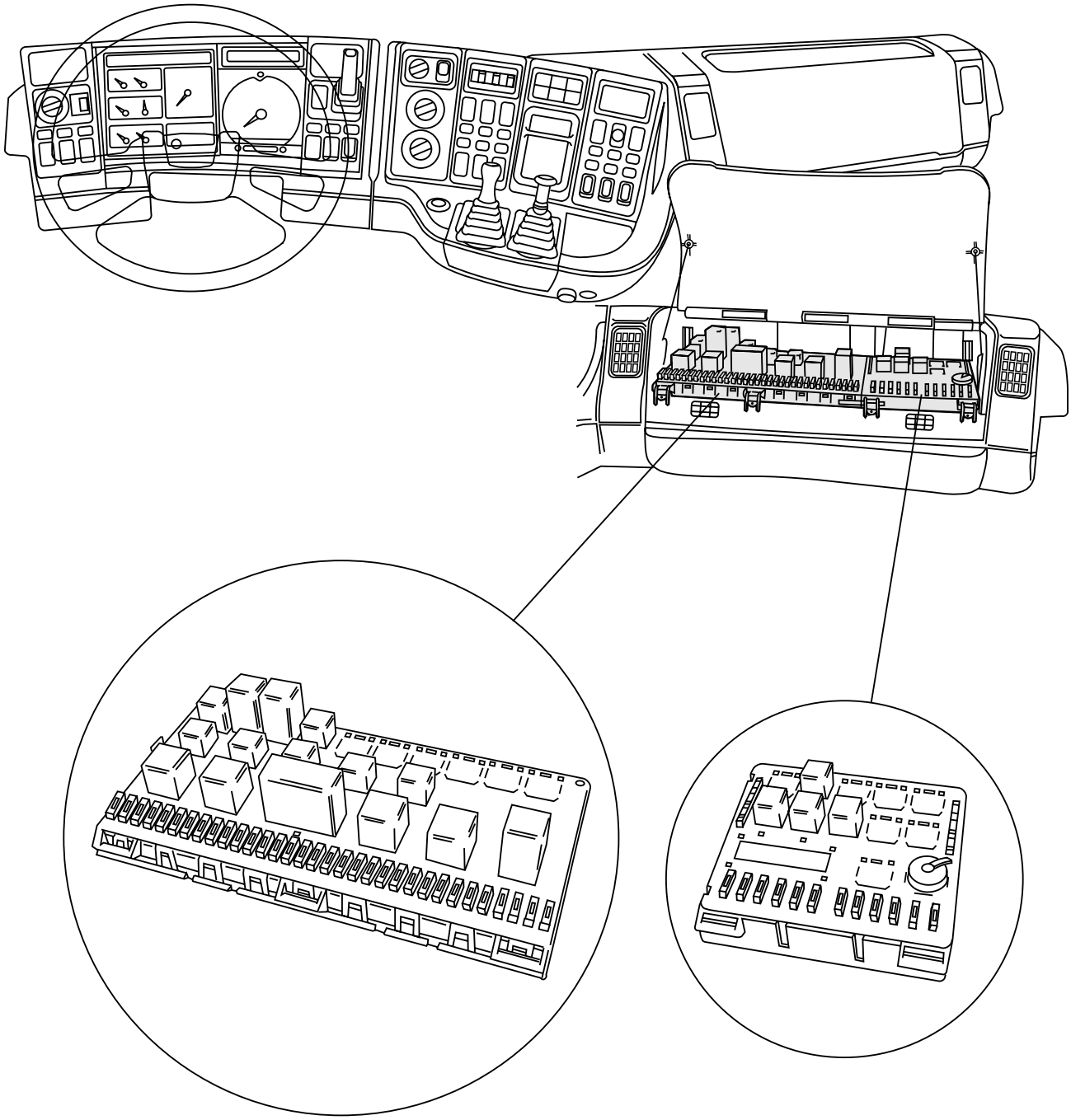
If cables are long, it may be necessary to use a thicker cable to reduce voltage loss.
Normally, a voltage loss of 5 % (1.2 V) is acceptable.

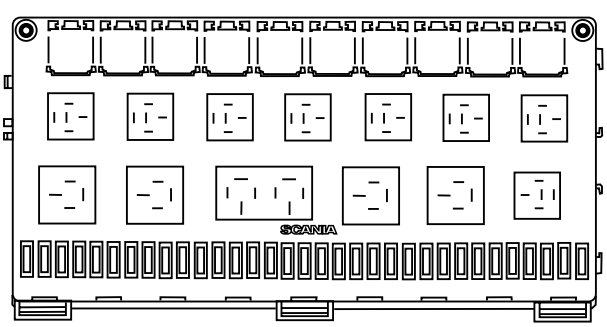
Voltage loss in copper conductors is calculated using the following formula:

U = I x (0.0175 x L) / A

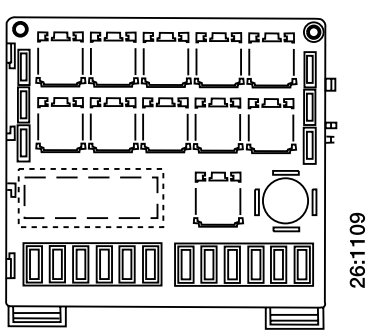
U = Voltage loss (V).
I = Current in amps (A).
L = Length of cable.
A = Cross-section of conductor (mm^2).

CENTRAL ELECTRIC UNIT



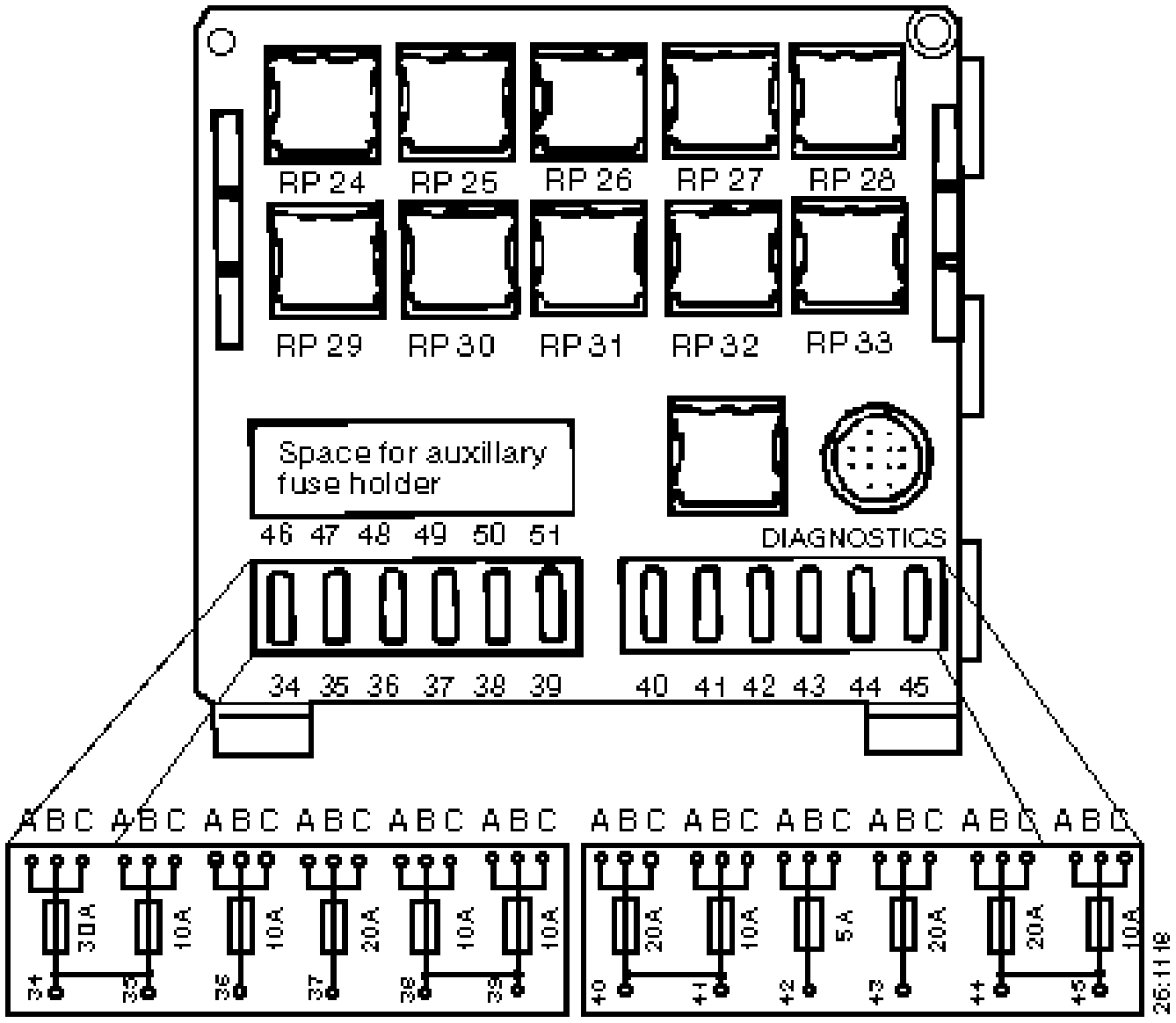


Central electric unit



Extra central electric unit (accessories/bodywork)

Extra central electric unit (accessories/bodywork)



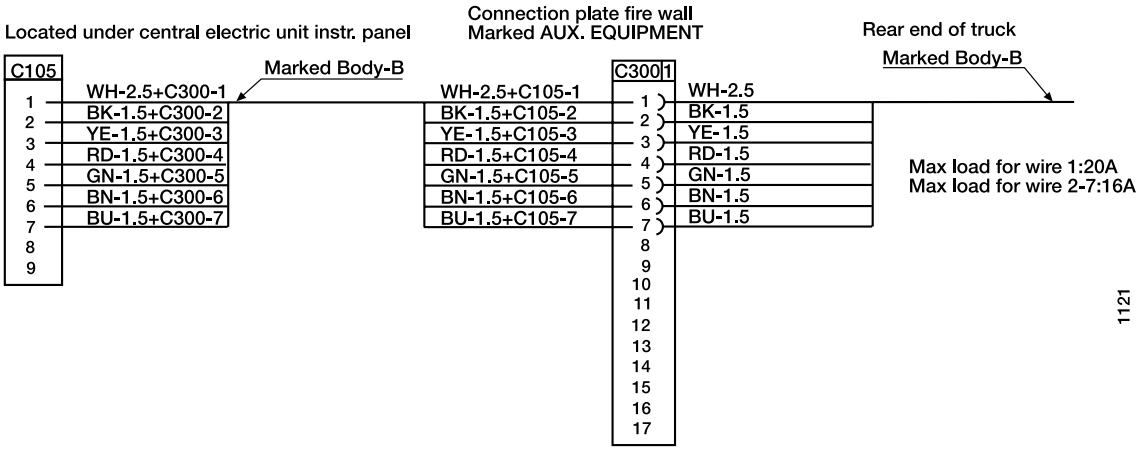
The extra central electric unit can have a varying number of positions occupied from factory, depending on what extra equipment, such as fuel/ battery heater and flame start, is fitted.

Extra fuse holder for positions 46-51, part number 1320852.

Extra relay holder, 9-pole, part number 1320851.

FACTORY-FITTED WIRING

With the exception of tractors, all vehicles can be ordered with a seven-core cable running from the cab to the rear end of the frame. Via a connector in the bulkhead marked C300 this cable is wired to a white connector marked C105 located under the central electric unit and terminates without a connector about 1 metre behind the junction box at the rear end of the frame.
The cable is of ADR design on vehicles ordered with ADR.

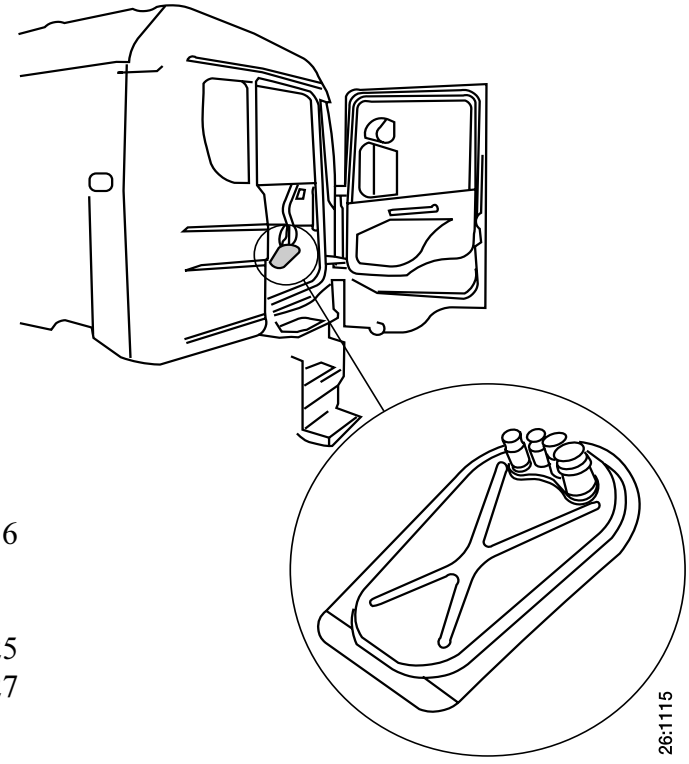


	Cable cross-section area	Colour	Max. load
1	2.5 mm^2	white	20 A
2	1.5 mm^2	black	16 A
3	1.5 mm^2	yellow	16 A
4	1.5 mm^2	red	16 A
5	1.5 mm^2	green	16 A
6	1.5 mm^2	brown	16 A
7	1.5 mm^2	blue	16 A

Suitable connector housing for C105: part. no. 813556

Suitable round female terminals
Cable cross-section: 1.5 mm^2 part no. 813925
Cable cross-section: 2.5 mm^2 part no. 813927

If the 7-core cable is not enough, or if it is necessary to route cables to the cab of tractor units, there are four lead-throughs of varying diameter in the floor on the passenger side.



Cable lead-throughs
Note: The floor panel is illustrated upside down to show the rubber plugs.

Factory-fitted wiring in cab

It is important to consider what optional wiring is required before ordering the truck as it is complicated to add wiring in the cab, especially in the roof.

All cabs are fitted with prerouted cables for connection of the following equipment:

- High-mounted working lights on rear wall.
- Rotating beacon mounted either on the rear wall or roof (Topline only on rear wall).
- Sign lighting.
- Spotlights under exterior sun visor.
- Electric sunroof.
- Interior background lighting.
- FM/AM radio.
- Electrically adjustable rear-view mirrors.

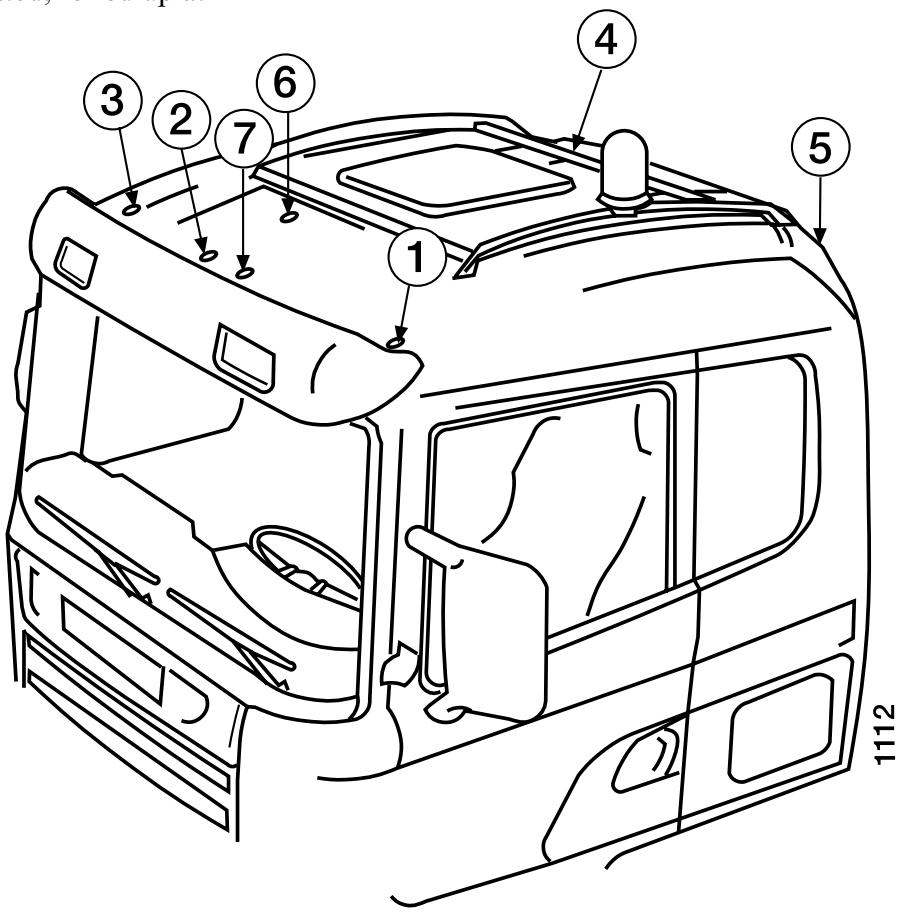
For most of the above equipment all connections are made in the roof shelf switch panel with the exception of external parts of the equipment.
However, in the case of the FM/AM radio, the roof shelf and some trim must be removed and modified. Fitting is made considerably easier with the radio prewiring option (see below).
In the case of the electrically adjustable rear-view mirrors, only the cable harnesses between the cab and doors contain the cables for this equipment. Mounting is much easier with the pre-wiring option for electrically adjustable rearview mirrors (see below).

The following optional equipment is also available for all cabs from factory:

- Fully fitted sign lighting.
- Fully fitted spotlights (2) in exterior sun visor.
- Fully fitted spotlights/foglights (2) in the bumper.
- Fully fitted electric sunroof.
- Fully fitted interior background lighting.
- Wiring for FM/AM radio, 12 V.
- Fully fitted FM/AM radio, 12 V.
- Fully fitted Scania Alert. (Only in combination with radio wiring or fully fitted FM/AM radio).
- Wiring for CB radio.
- Wiring for cell phone.
- Wiring for electrically adjustable rear-view mirrors (enables fitting of electrically adjustable mirrors on both driver and passenger sides).
- Fully fitted electrically adjustable rear-view mirror on passenger side.
- Electric’s for front mounted equipment

Seven holes for electrical equipment are predrilled in the roof panel.

1. An aerial is fitted for the radio or radio prewiring options. If neither option has been selected the hole is plugged but an aerial cable is fitted between the hole and the radio outlet in the roof shelf.
2. Cable grommet and cables for upper position marker lights. A connector housing for fitting upper spotlights is available for connection behind the cable grommet. Wiring is available as a spare part.
3. An aerial cable for the roof shelf is fitted behind the rubber plug if the prewiring for CB radio option is selected.
4. Hole with rubber plug.
5. Wiring behind rubber plug for rotating beacon and work lighting. Three-core cable (common earth lead)
6. Wiring behind rubber plug for sign lighting and rotating beacon. (Not Topline.)
7. If the mobile telephone prewiring option is selected, an aerial bracket with connected cable which ends in the dashboard is fitted, rolled up at the A pillar on the driver's side.



Note: The drawing is in mirror image for right-hand drive trucks.

Factory-fitted wiring for FM/AM radio

Cable harness for radio equipment, radio bracket, radio panel and 24/12V-4A voltage converter fitted in the roof shelf. Radio aerial mounted on roof panel, including factory-fitted 75-ohm impedance aerial cable connected to the radio outlet in the roof shelf.
Fitted speakers, each with 4-ohm impedance, nominal 30 W and maximum 40 W output, as follows:
Normal sleeper cabs: Three speakers fitted in the roof shelf.
Topline: Total of four speakers, two fitted in the roof shelf and one in each rear corner panel.

Factory-fitted wiring for CB radio

One extra radio bracket, extra voltage converter 24/12 V as below and prerouted 12 V cables are fitted in the roof shelf above the windscreen.
Prerouted aerial cable, impedance 50 ohm, between the plug in the roof and the roof shelf. One extra speaker, impedance 4 ohm and max. output 20 W, fitted in the centre of the roof shelf.

Factory-fitted wiring for cell phone

An extra 24/12V voltage converter as below, mounted in the roof shelf.
A 12 V socket visible mounted in the roof shelf switch panel.
A bracket with a 12 V socket fitted in the inner side panel under the bunk on the passenger side.
An aerial bracket on the cab roof with connected aerial cable which ends in the dashboard, rolled up at the A pillar on the driver’s side.

Factory-fitted extra voltage converter 24/12 V

The extra voltage converter is mounted in the roof shelf when the prewiring option is selected for either CB radio, mobile telephone or both.
The voltage converter, which is connected directly to the battery and not controlled by the ignition switch, can be loaded with 12V-15A, i.e. 200 W.

Factory-fitted wiring for electrically operated rear-view mirrors

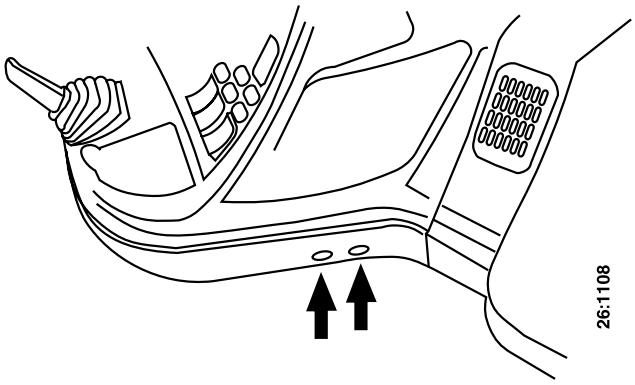
Cable harness fitted in the instrument panel, to the central electric unit and to both door bridge cables.
Prewiring makes it easy to add electrically adjustable mirrors, either only on the passenger side or on both sides.

Connecting extra lights

Extra lights can not be connected directly to the light switch but must be controlled from an output on the main beam relay.
See attachment *"Manual: Wiring diagram"*.

Power socket in cab

A 12 V and a 24 V socket are normally located in the dashboard on the passenger side. Versions with two 24 V sockets also occur.
With the mobile telephone prewiring option selected, two 12 V sockets are fitted additionally.
(See under prewiring for mobile telephone.)



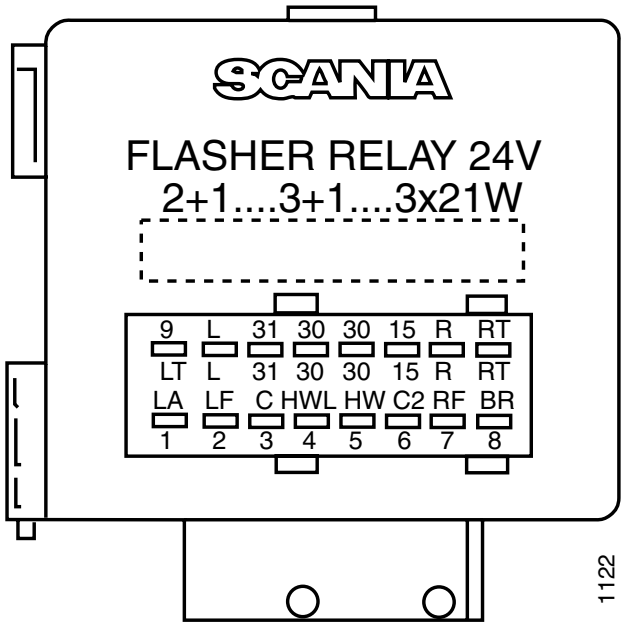
Extra direction indicators

The flasher relay, see attachment *"Manual: Wiring diagram"*, has three circuits - vehicle front/side, vehicle rear/side and trailer, with protection against overloading and a warning function for bulb filament failure.
When a lamp blows, the driver is warned as below.

The indicator lamp goes out if:

- A lamp at the front has blown
- The last lamp at the rear has blown

The indicator lamp for the trailer goes out if the last lamp on the trailer blows.



Note: The system must not be loaded with more than: eight 21 W bulbs on each side of the vehicle.
Three lamps are factory fitted. For bodywork there is capacity for two lamps in the rear/side circuit and three lamps in the trailer circuit.

If more or stronger lamps are connected, the overload protection activates when the hazard lights are switched on and they stop flashing.
The overload protection is reset by turning the starter switch to 0.

Extra brake light lamps

The brake light circuit must not be loaded with more than eight 21 W lamps.
If the circuit is overloaded, the life of the brake light relay is reduced.
See attachment *"Manual: Wiring diagram"*.

Electrical items for front-mounted equipment

Vehicles prepared for front-mounted equipment can, in addition to brackets (see section *"Equipment mounted at the front"* in Chapter 7 *"Other bodywork equipment"*) also be prepared with electrical items such as switches and cable harnesses.

This electrical preparation consists of three parts:

1. Switch for plough lights on instrument panel.

   The switch is marked S65 and fitted in the upper part of panel E, see attachment *"Manual: Wiring diagram"*, on vehicles without pressure gauge for axle weight and in the lower part on vehicles with pressure gauge.

   Part numher of the switch is 1391312.

   Part number of the switch decal is 1390521.

2. Wiring harness in the instrument panel.

   The wiring harness is fitted from switch S65 to the central electric unit. Part number of the wiring harness is 1391313.

3. Wiring harness from central electric unit to underside of service panel.

   Trucks with P and R cabs have four contacts fitted behind the service panel.

   On trucks with T-cab those contacts are to be found under the service step on the passenger side. The contacts are marked C364, C365, C366 and C367.

They contain the following signals:

C364 - Signals for main beam, dipped beam, position light and direction indicators on the left side.
C365 - Signals for main beam, dipped beam, position light and directon indicators on the right side.
C366 - Signals for position light on front-mounted equipment, left side.
C367 - Signals for position light on front-mounted equipment, right side.

There are also four sealing plugs to use whenever the contacts are not in use. These plugs should always be used to prevent the contacts from corrosion.

Suitable contacts to use for connection to C364 and C365 are:

Part number 815641 - Socket (male)
815635 - Socket (female)

Suitable contacts to use for connection to C366 and C367 are:

Part number 815638 - Socket (male)
815632 - Socket (female)

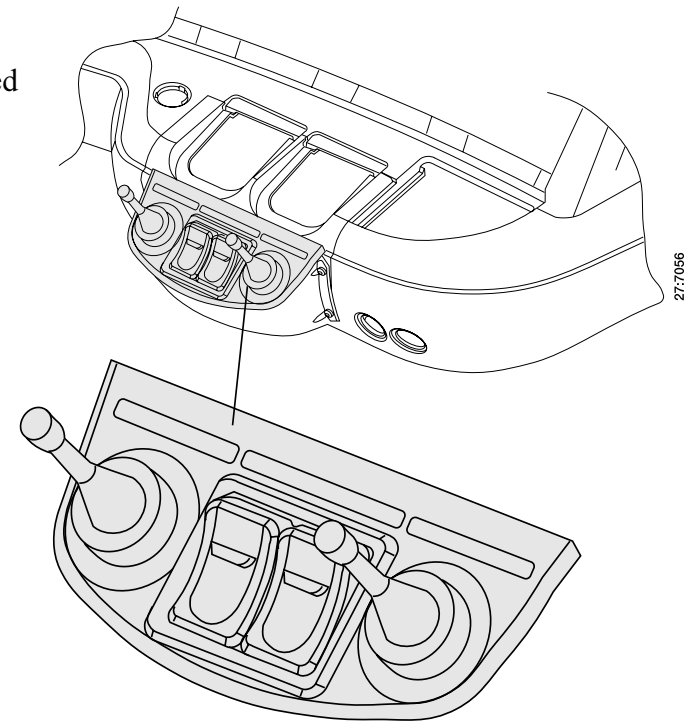
Other parts:

Part number

815840	Cable connector type casing (7 per contact)
815838	Cable connector type pin (7 per contact)
1354883	Both for C364 and C365 (cable diameter 4,2-6,5 mm)
1354885	Both for C364 and C365 (cable diameter 6,2-9 mm)
814776	Both for C366 and C367 (cable diameter 4,2-6,5 mm)
815832	Both for C366 and C367 (cable diameter 6,2-9 mm)

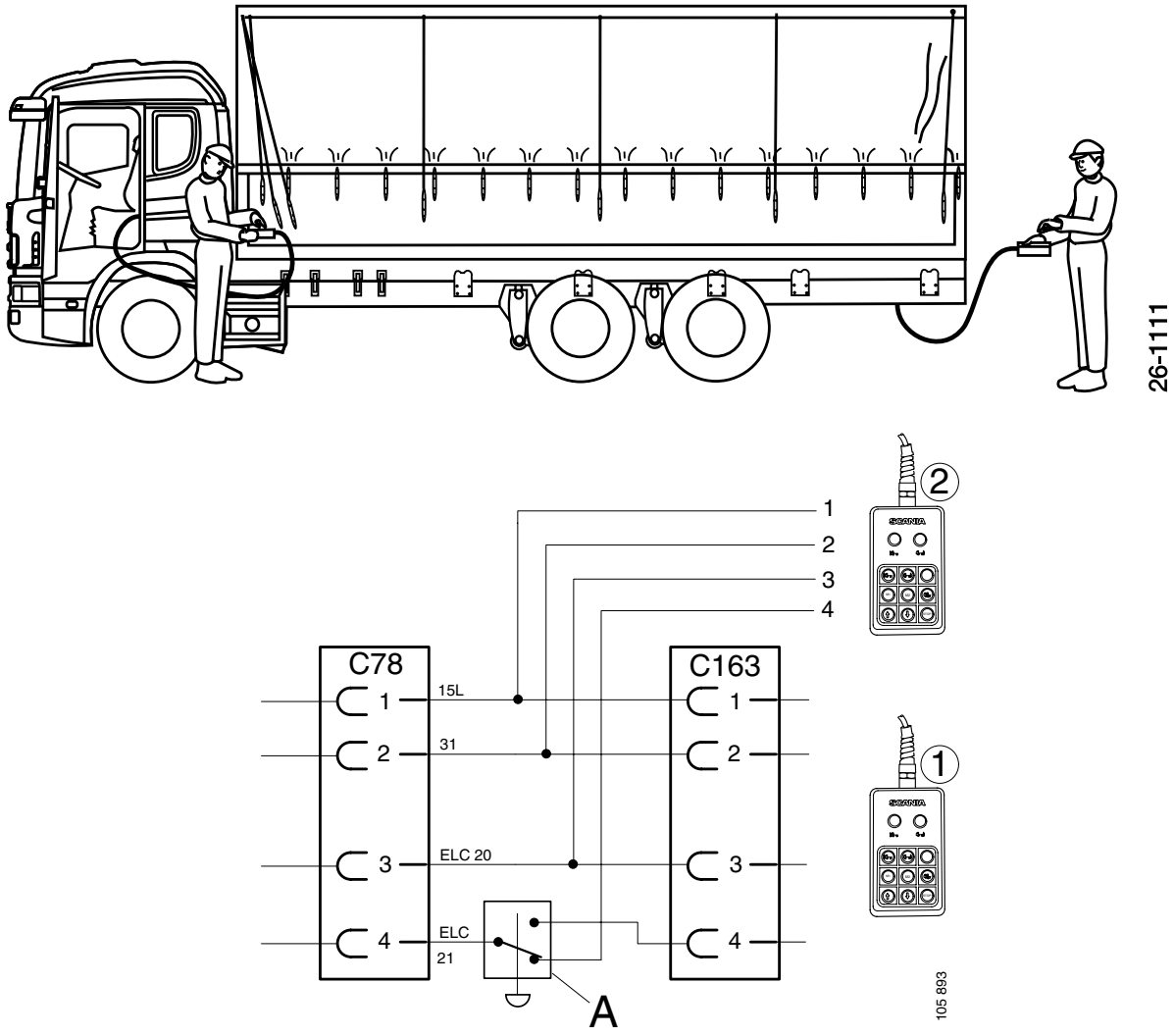
Vehicles with front-mounted equipment may also need extra switches and joysticks for manoeuvring.
A panel equipped with two extra switches and two joysticks is obtainable ex works or can be purchased as an accessory. This panel screws onto the regular instrument panel below the parking brake lever.

Part number	Part name	Quantity
1384610	Switch panel	1
1113490	Joystick (4-way)	2
1390308	Mounting frame	1
1371214	Switch	2
815161	Screw	4
1115794	Decal set	1



EXTRA CONTROL BOX

An extra control box fitted to the rear of the vehicle can be useful when handling loads (vehicle with air suspension).
Connection between connectors C78 and C163 is the most suitable. C78 is located below the central electric unit. See attachment *"Manual: Wiring diagram"*. Use a cable cross-section of 0.75 mm^2.
Also fit a two-way switch as shown in the illustration.

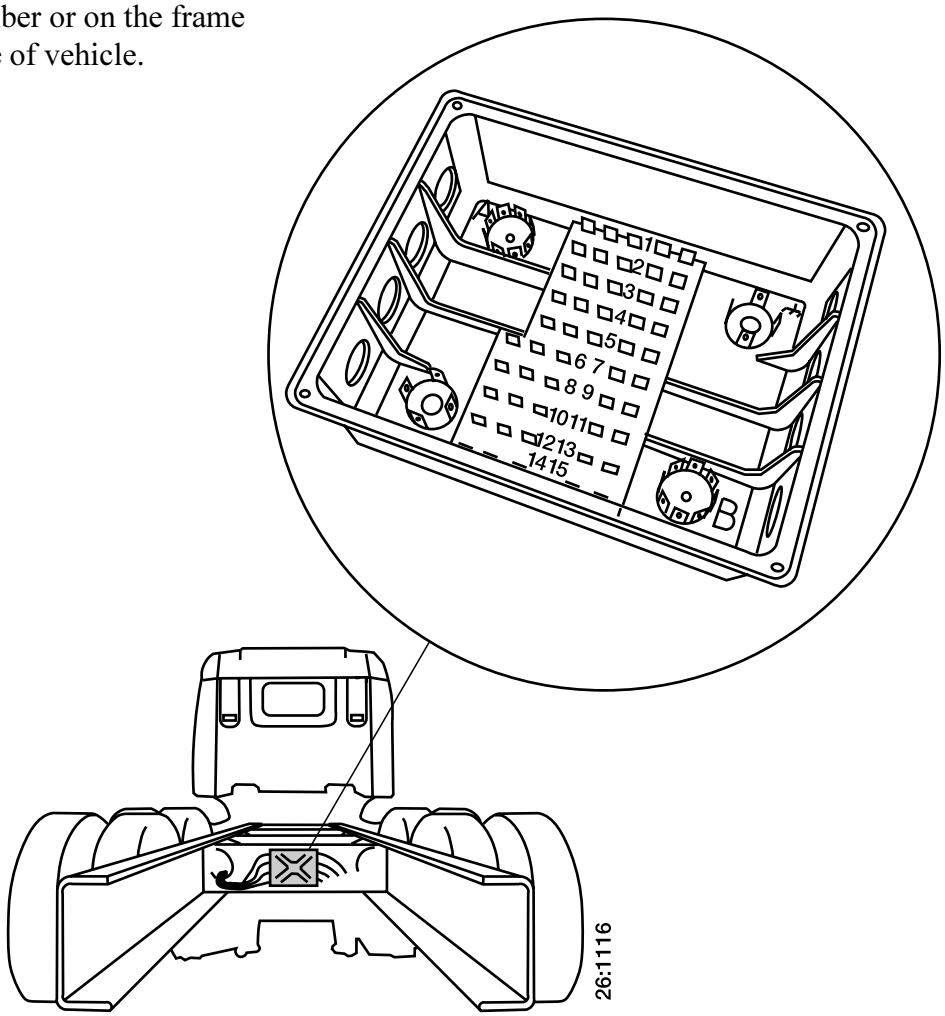


C78
1 Red
2 Black
3 Yellow
4 Green

1 Control box
2 Extra control box
A Two-way switch

JUNCTION BOX IN FRAME

The junction box at the rear of the frame is located either on the last crossmember or on the frame web, depending on the type of vehicle.



Left-hand rear light is connected to positions 1, 2, 3, 4, 6.

Right-hand rear light is connected to positions 1, 2, 3, 5, 7.

Side marker lights are connected to positions 4, 5.

Trailer cable 24S is connected to positions 1, 2.

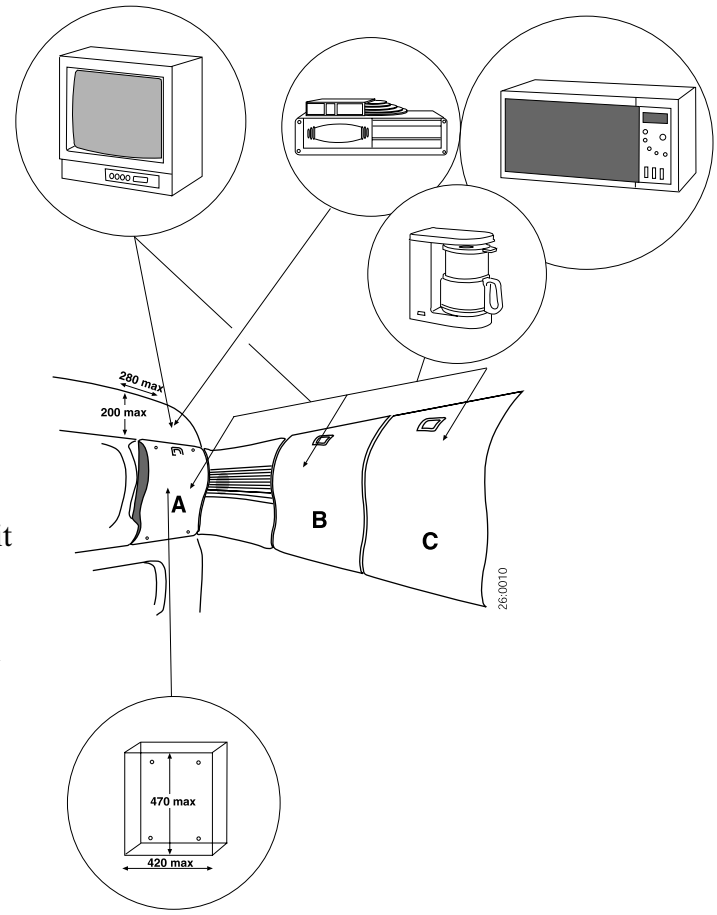
Trailer cable 24N is connected to positions 3, 4, 5, 8, 9, 10.

Differential lock is connected to positions 11, 12.

See also chapter 14 *"Bodywork adaptations BWA"* section *"Trailer connections"*.

PLACE FOR OPTIONAL ELECTRICAL ACCESSORIES IN TOPLINE CAB

Our Topline cabs have two storage compartments on the rear wall and one compartment on each side wall.



If you wish to use one or more of these spaces to fit a TV, microwave, CD changer etc., the hatch must be removed.
The rear part of the compartment is left in position to protect the cab insulation.
In order to fit extra equipment, a frame must be manufactured which uses the four screws securing the compartment.
There is a space above compartment A which can be used for a small TV or CD changer.
When making the frame for this space, use the top two screws in compartment A and the bracket just above on the roof.
When compartments B-C are used, standing space in the cab is limited with the upper bunk folded out.

Good ventilation round optional accessories is essential due to the risk of fire. Exercise care when clamping wiring harnesses and always use rubber grommets at lead-throughs.

All extra equipment in these spaces must be fitted so that it cannot become detached in an accident.

POWER TAKE-OFFS IN COMBINATION WITH OPTICRUISE

The Opticruise is programmed to engage and disengage gears at the torque level which is best for the gearbox.
If power take-offs, or other equipment, which can be engaged and disengaged during operation and which increase torque considerably more than normal wear, are coupled, the Opticruise must receive a signal in order to compensate for the increased torque.

The Opticruise control unit has two different inputs to handle different types of power take-off / load. The inputs are active at +24 V.

THE INPUTS MUST ONLY BE ACTIVE WHEN THE LOAD IS COUPLED.

EK/ED Power take-off

This input, pin 9 on the control unit, must be used for engine-driven (independent of clutch) power take-offs. The Opticruise can compensate for an extra torque take-off of **maximum 200 Nm** during operation.
Torque compensation can only be made for **one** power take-off or **one** extra load.

EG Power take-off

This input, pin 50 on the control unit, must be used for gearbox-driven (independent of clutch) power-take offs.
With this input activated, it is not possible to change gear while driving. Changing gear with the power take-off engaged can damage the gearbox. However, it is possible to engage a gear when the vehicle is stationary in order to allow range operation with the power take-off active.

Several power take-offs or other equipment which require gear locking can use this input. However, when several signals are connected at the same time, they must be connected so that no conflict arises with potential differences.

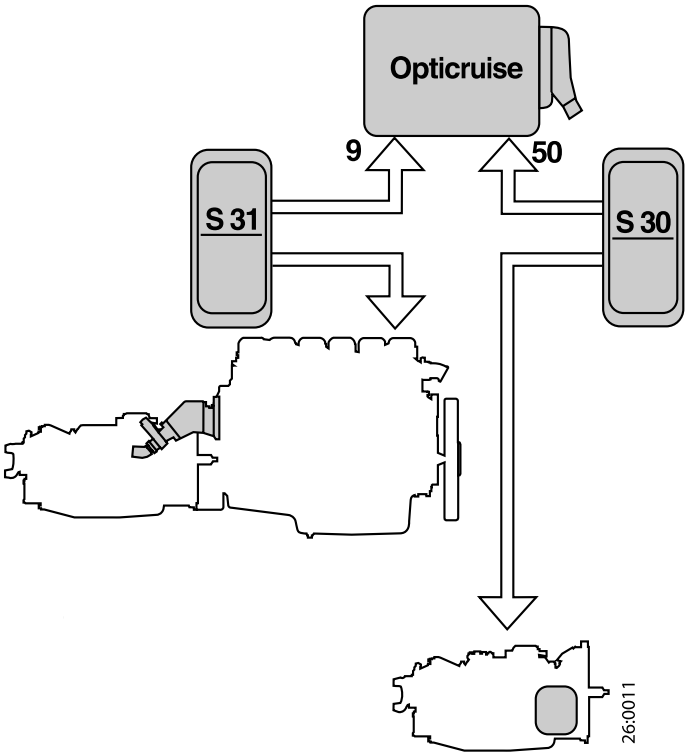
Prewired connections

EK / ED

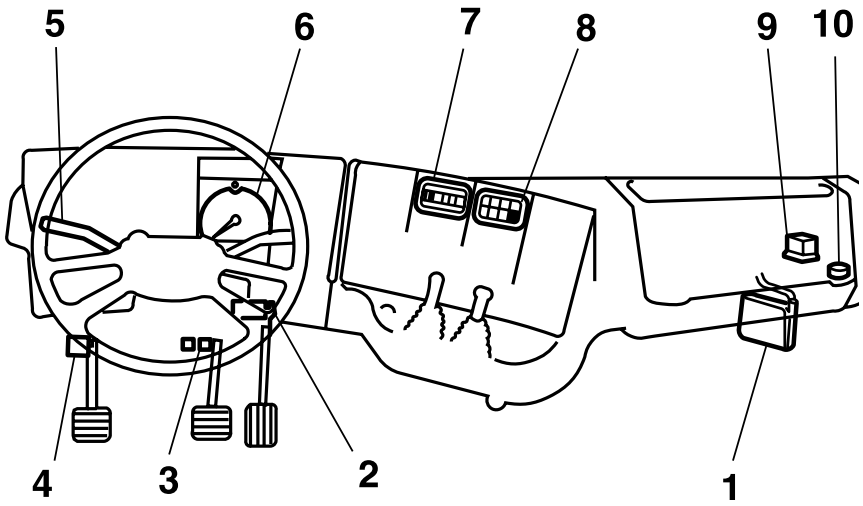
The cable between S31 and the control unit is always fitted. If EK / ED is opted for, it is connected to the base for S31. Otherwise, it is not connected.
The cable between the power take-off and S31 is only fitted if the power take-off has been opted for.

EG

Both cables are fitted as standard and the cable to S30 is connected.



EDC



Trucks equipped with EDC (Electronic Diesel Control) have a number of prewired functions to facilitate crane operation and the like.

The prewired functions are:
- Hand throttle
- Limited hand throttle
- Raised idling speed
- Fixed engine speed
- Torque limitation
- Speed limiter (vehicles with coordinator)
- Engine stop
- External control of engine speed

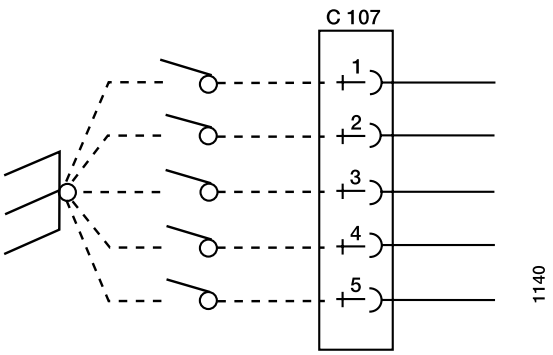
The connections are made at the factory and cables are routed to a 5-pin connector marked C107 under the central electric unit.
On vehicles with a coordinator the connector is of 6-pin type and labelled C271. It has the same location under the central electric unit and both connectors are blue. In both cases the housings are complete assemblies with corresponding connectors ex works.

- Cable terminal for C107, part no. 199950
- Cable terminal for C271, part no. 815886

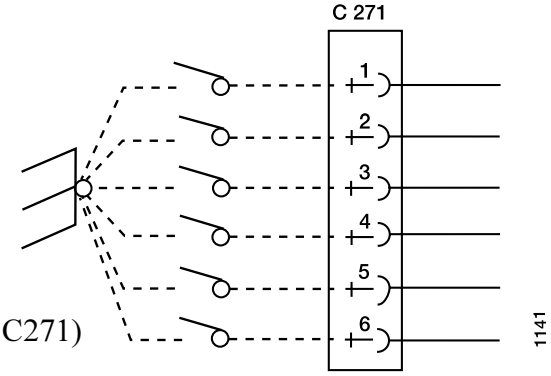
Use a cable cross-section area of 0.75 mm^2.

1 Control unit (may be located elsewhere)
2 Throttle pedal sensor
3 Brake pedal switches
4 Clutch pedal switch
5 Control for cruise control
6 Tachograph (speed)
7 Diagnostics switch with lamp
8 Indicator lamp
9 Power supply relay
10 Diagnostics socket for PC

The functions are engaged by earthing different combinations of certain pins on the connector.

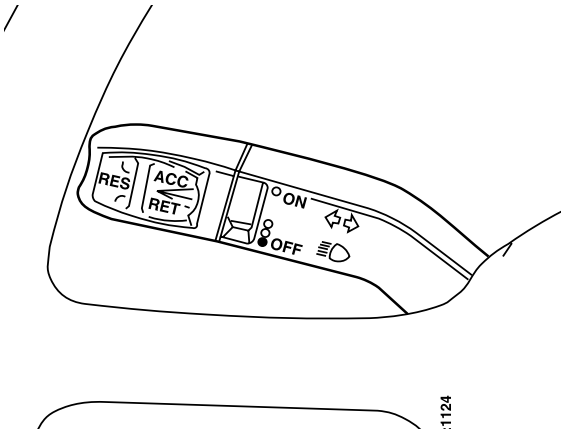


1 Violet
2 Grey
3 Brown
4 Green
5 White
6 Yellow (only C271)



Hand throttle (normal)

The hand throttle is used to set the desired engine speed during crane operation and the like. Setting is carried out using the cruise control switches. The hand throttle can be used when the vehicle is stationary or when driving at low speeds, max. 10 km/h.
Engine speed can be set anywhere between 500 and 2000 rpm.
See vehicle Operator's manual.



Limited hand throttle

The limited hand throttle basically works in the same way as the normal hand throttle. The difference is that engine speed (between 700 and 2000 rpm) and torque (between 200 Nm and maximum) can be limited to protect equipment connected to the power take-off.
It is also possible to select whether the throttle pedal is to be active or disengaged. These options are programmed by the Scania workshop. The desired engine speed, up to the programmed rpm, is set with the cruise control switches. The function is activated by earthing connector pin 1.
See also vehicle Operator's manual.

Raised idling speed

Minimum engine rpm can be selected using the raised idling speed function. Idling speed can be increased in this way for such purposes as filling the compressed air system or warming up the engine. The function is also useful on vehicles with a cement mixer.
Engine speed (500-800 rpm) is set with the cruise control switches and is not disengaged by activating the brake pedal, clutch pedal, exhaust brake or retarder. The set engine speed can be stored in the memory.
The function is activated by earthing pin 5.
See also vehicle Operator's manual.

Fixed engine speed

Fixed engine speed means that the driver cannot alter engine speed with either the throttle pedal or the cruise control switches. This can be used when precision is important.
Engine speed (600-2000 rpm) and maximum torque (200-2000 Nm) are programmed by the Scania workshop.
The function is activated by earthing pins 1 and 5.
See also vehicle Operator's manual.

Example of setting three fixed engine speeds

Certain types of bodywork equipment require one or more different engine speed levels.
Examples showing how up to three different fixed engine speeds can be set are given below.

The cruise control switch must be in the ON position for these settings to function correctly.

Engine speed 1

Setting engine speed 1, say 750 rpm, using the ”Raised idling speed” function.
This function can be used between 500 and 800 rpm.

Engine speed 2

Setting engine speed 2, say 1100 rpm, using the ”Limited hand throttle” function.
This function can be used between 700 and 2000 rpm.

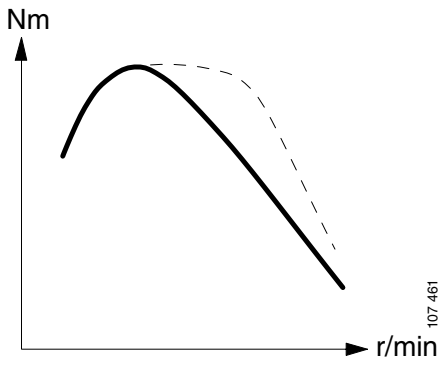
Engine speed 3

Setting engine speed 3, say 1400 rpm, using the ”Fixed engine speed” function.
This function can be used between 600 and 2000 rpm.

Engine speed settings 1 and 2 can be set/adjusted by the driver using the cruise control switches. See vehicle Operator’s Manual.
Engine speed setting 3 is to be programmed at a Scania workshop.

Torque limitation

The EDC unit can be programmed for three different levels of torque limitation. These are chosen by earthing pins 3 and 4 in different combinations. The function can be combined with engine speed control.

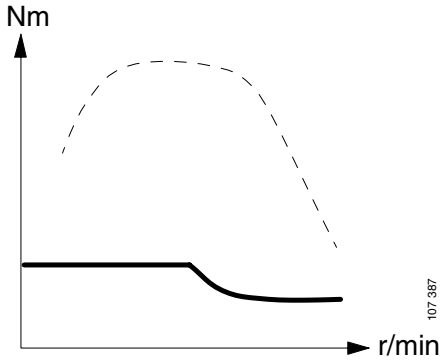


Torque limitation 1

With Torque limitation 1 engaged the engine's torque curve is "peaky". It then feels as though pulling power increases when engine speed drops, e.g. on uphill gradients.
The function is activated by earthing pin 4.

Torque limitation 2

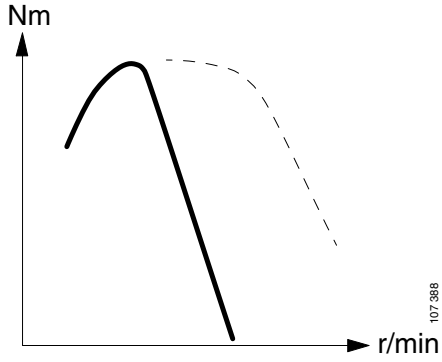
With Torque limitation 2 engaged the torque is limited to 700 Nm at engine speeds up to 1000 rpm. At higher engine speeds the torque limit is slightly lower.



The function is used on vehicles with a torque converter and manual gearbox. Engagement can be arranged so that the function is active when the clutch pedal is depressed. That is to protect the clutch from overheating, such as when pulling heavy loads.
The function is activated by earthing pin 3.

Torque limitation 3

With Torque limitation 3 a torque curve with early breakaway is obtained. Torque limitation starts at 1000 rpm and stops at 1400 rpm. This function can be used as an alternative to the engine speed control function "Limited hand throttle" to protect a power take-off, for instance.



With this function it is also possible to reprogram the torque curve to suit your own requirements. This is done at a Scania workshop.
The function is activated by earthing pins 3 and 4.

Speed limiter

Vehicles having the 6-pin connector C271 also have an additional function, speed limitation. This can be used for example on refuse collection trucks with an external platform and can be engaged when someone is standing on the platform. The speed limiting function is independent of the regular cruise control and can be used as a complementary system to it.
The default speed is 70 km/h but it can be changed at a Scania workshop. The function is activated by earthing pin 6.

This function is also included on vehicles with unit injectors (PDE) and EDCMS6. The function is then activated by applying current (+24 V) to pin H-6 of connector C112 at the cab lead-through.
See attachment *"Manual: Wiring diagram"*.

Cable terminal for C112.
Part no. 815 844
Use a cable cross-section area of 0.75 mm^2.

You can see whether or not the vehicle has a coordinator by looking at the diagnostics panel. If it does have a coordinator there will be a switch as shown in the illustration. In addition, the switch lamp comes on for a few seconds when power is turned on with the ignition switch.

Engine stop

With the engine stop function the engine can be stopped quickly if, for instance, an accident occurs during crane operation.
When the engine stop button is pressed, pin 2 of connector C107/271 is earthed and the engine immediately stops if the vehicle is stationary. If the stop is activated while the vehicle is in motion, engine speed drops to idling but the engine is not shut down. This is in order to retain servo assistance for power steering.

External control of engine speed

General

The speed of EDC engines can be regulated with the cruise control. It can be operated from outside the vehicle with an extra control unit connected to the vehicle by an extension cable. The connection below ensures that external control of engine speed is only possible when the parking brake is applied. Connection of the extra control unit is shown in wiring diagram no. 16:04-57, part number 1 712 468, which can be ordered from your Scania dealer.

Proceed as follows

1. Connection of the extra control unit is via pins 8 and 9 of connector C 23 (a 9-pin connector located on the cable nearest the cruise control switch assembly).
2. Connect an extra cable to pin 9 which leads to a new connector for the extra control unit. This should be located in the front cab wall.
3. Transfer the existing cable connected to pin 8 of connector C 23 to pin 30 of a new relay (part no. 1 391 322) mounted in the central electric unit.
4. Run a new cable from pin 8 of connector C 23 to pin 87A of the relay and a cable from pin 87 of the relay to the new connector for the external control unit.
5. Power for the new relay is supplied via fuse, as shown in the wiring diagram, with switch (part no. 1 488 066) and a cable to connector C 56 (under the central electric unit), terminal block R pin 3 (signal when the parking brake is applied).
6. The external control unit must be arranged according to the schematic so that only one function at a time can be activated. The tolerance of the resistors should be ±1%.
7. The external control unit's connection cable should be twisted with 30-40 turns per metre to avoid electrical interference in the system.
8. A motor stop should be mounted adjacent to the external control unit.

ADR

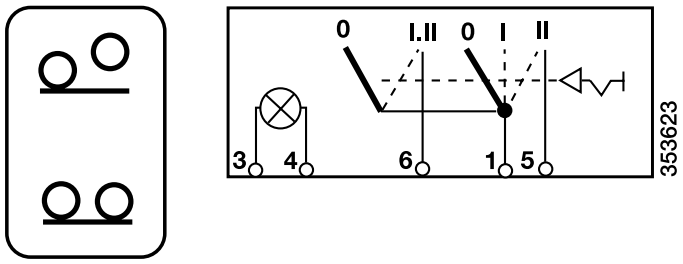
Scania supplies chassis equipped in conformity with applicable international ADR regulations. The chassis are supplied with equipment and certification for the relevant ADR category (AT, EXII, EXIII, FL and OX), which means that no modification of ADR related components/systems shall be made to the chassis in connection with bodywork assembly unless so required by national laws and regulations.

Bodywork on ADR-equipped vehicle

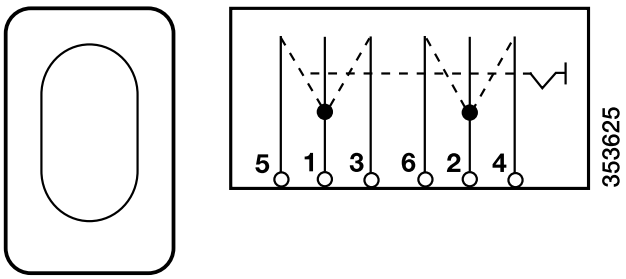
The following applies to the connection of extra equipment on an ADR classified chassis:

- All bodywork/modification affecting ADR must be approved by the vehicle inspection authority in the country of registration.
- Conversion of a non-ADR chassis may be carried out in consultation with a Scania distributor and the relevant national authority. To facilitate official approval the use of genuine Scania ADR parts is recommended.
- An ADR-classified cable is available for the electrical connection of bodywork. See the section entitled *"Factory-fitted wiring"* in this chapter.
- The workshop or bodywork builder is responsible for ensuring that bodywork/ modification complies with ADR requirements.

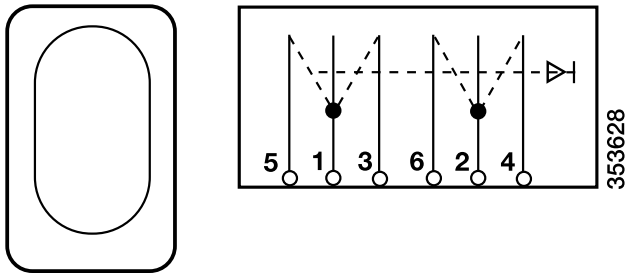
SWITCHES



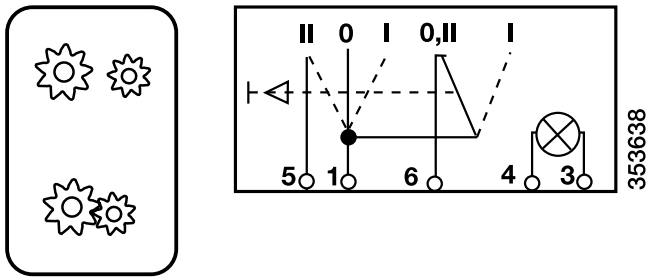
Tag axle lift (air suspension) 353623



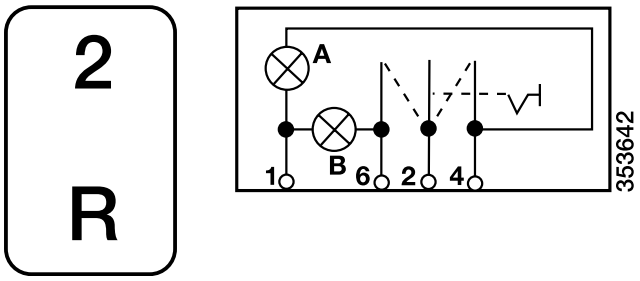
Interior lighting 353625



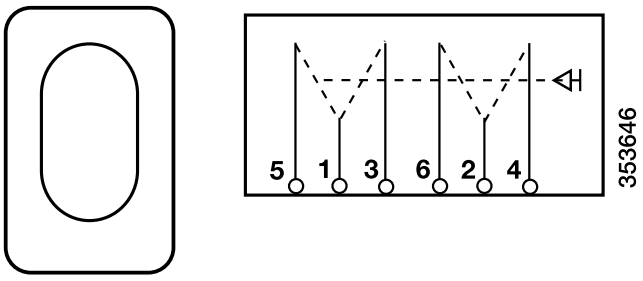
Electric sunroof 353628



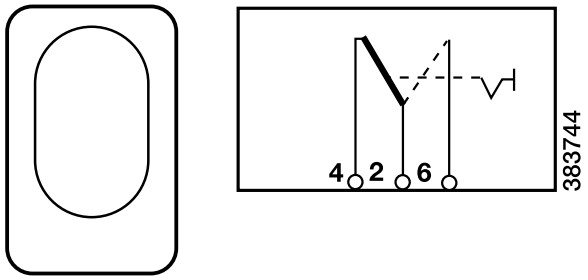
Power take-off (dependent on parking brake) 353638



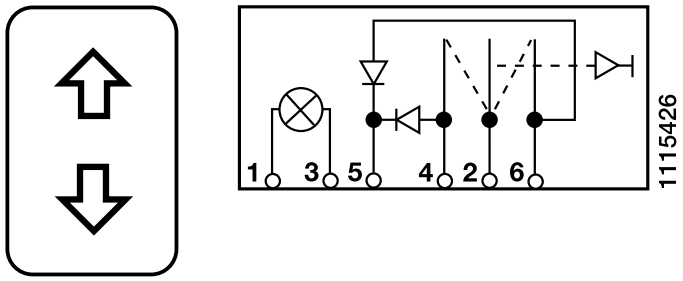
Socket 353642



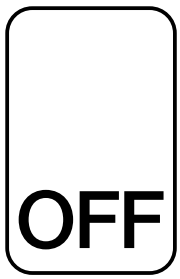
Short stop heater, Central lock (Topline from upper bunk) 353646

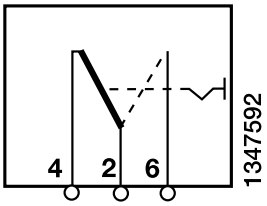


Interior lighting (Topline), Air horn 383744

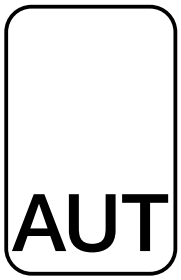


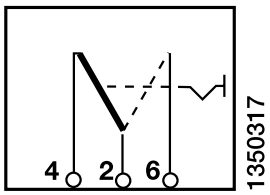
Robson drive 1115426



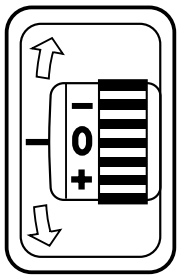


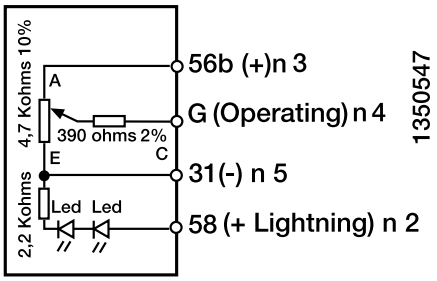
TC 1347592



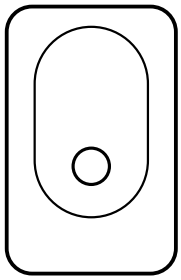


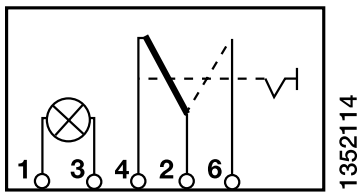
Retarder 1350317



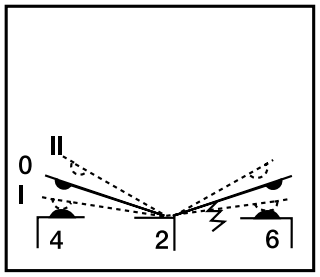


Rheostat (light level) 1350547

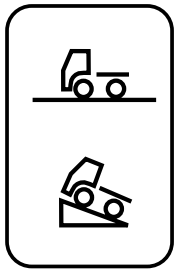


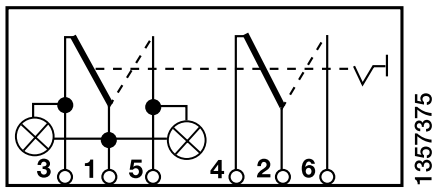


Front foglight 1352114

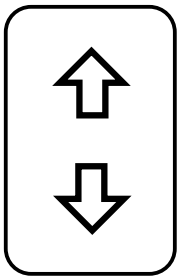


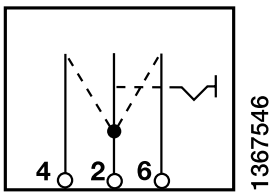
Speed limiter with cruise control 1357244



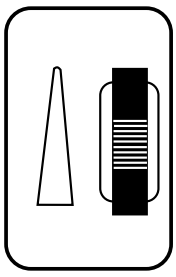


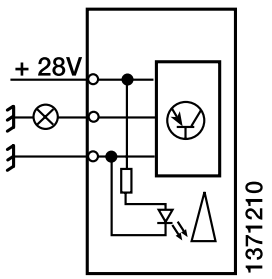
Opticruise (selection of driving mode) 1357375



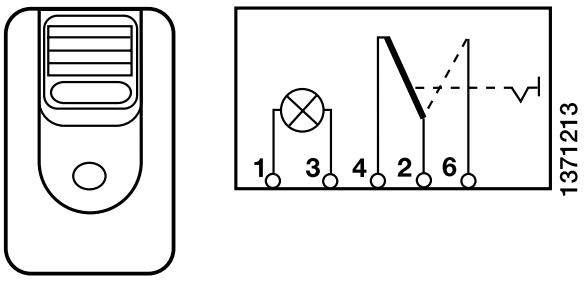


Mechanical air suspension 1367546

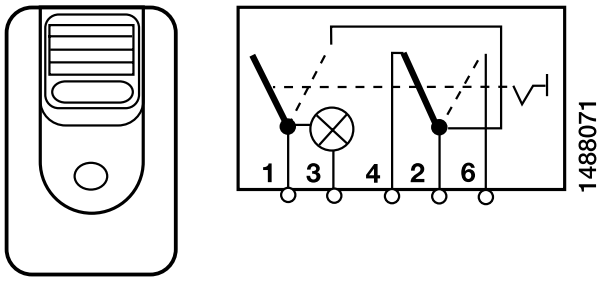




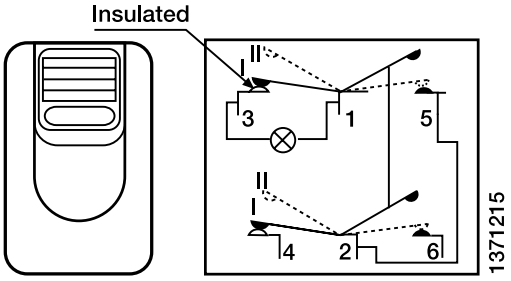
Rheostat (instrument illumination) 1371210



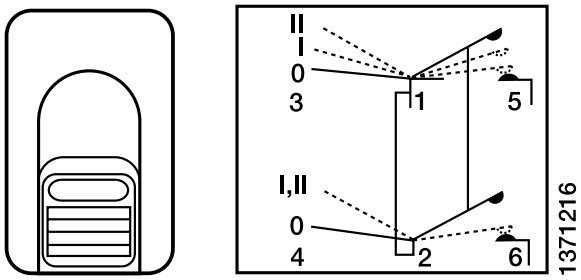
Differential lock (all wheel drive) 1371213



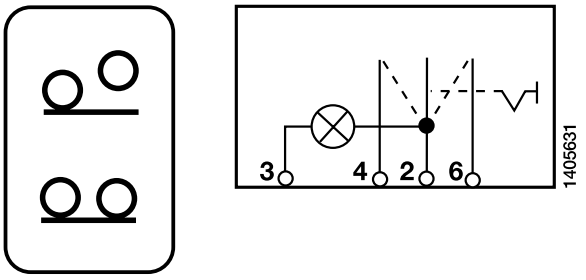
Differential lock / Power take-off 1488071



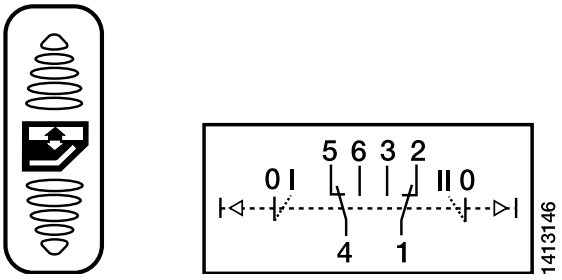
Instrument panel 1371215



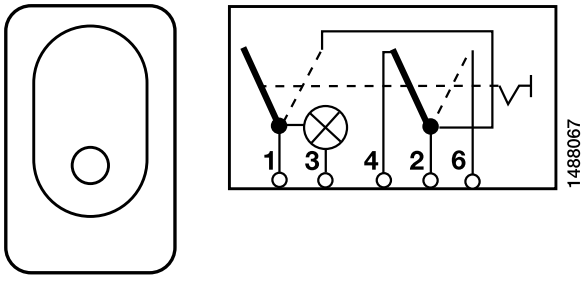
Instrument panel 1371216



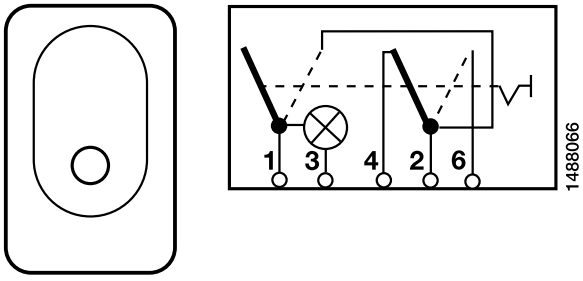
Tag axle lift (leaf spring) 1405631



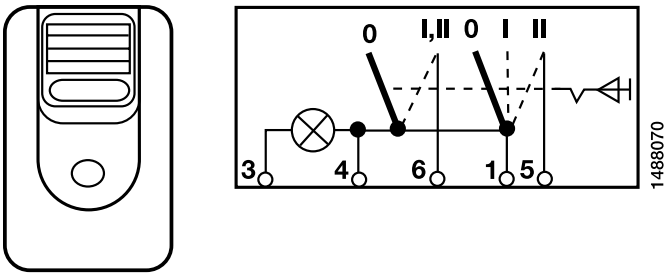
Electric windows 1413146



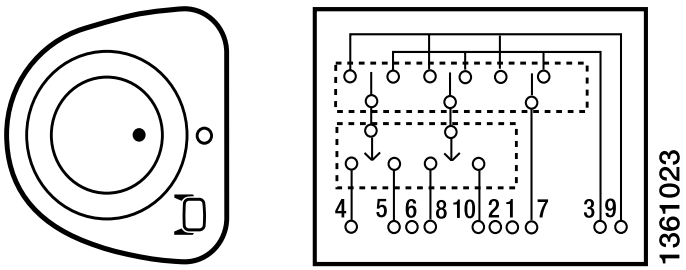
Rear foglight, Scania Alert, High-level work lights on rear wall 1488067



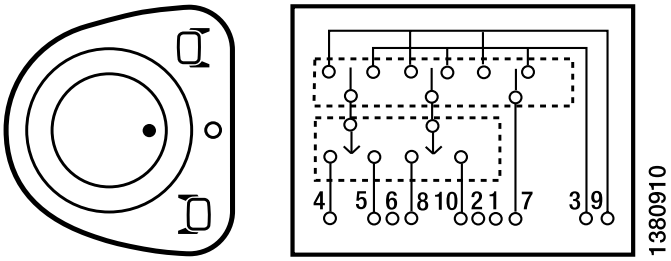
Electrically heated rear-view mirror, Sign lighting, Interior background lighting, Spotlights, Rotating beacon 1488066



4x4/6x6 with ABS
1488070



Electrically adjustable mirror on passenger side
1361023



Electrically adjustable mirrors for both driver and passenger sides 1380910