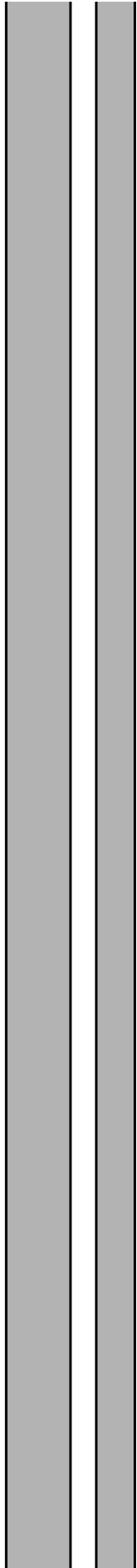


SCANIA

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Issue 1 **en**



Wiring diagrams manual

and list of components

For buses

cardiagn.com

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General

The present issue of the Wiring Diagrams Manual is for chassis in the 4 series. All components in the chassis electrical system are included in the list of components although not all of them are shown in the location diagrams. Please consult the service manual for the equipment in question.

The list of components provides information on all the components that make up the electrical system. The information consists of the following:

- Component code
- Designation, function, etc.,
- References to location diagrams
- References to wiring diagrams.

See also Key to the list of components on page 3.

All the connection diagrams for basic and optional electrical equipment for the 4 Series will be found under Connection diagrams on page 27.

The table entitled Circuit diagram for basic electrical equipment on page 31 presents the locations of the electrical functions (circuits). The table includes references to current paths in the diagram.

The section entitled Cable markings on page 34 explains the relation between the various markings and functions of the cables.

Page 39 is a table of all the types of bulb to be found on a chassis.

There are a number of location diagrams that show where the components are located in the vehicle. See page 40.

Note: The location of the components applies to left-hand-drive vehicles. The batteries and electrical system in the driver's area of a right-hand-drive vehicle have locations the mirror-opposite of those in a left-hand-drive vehicle.

List of components

Code	Designation	Page
B	Make and break switches	4
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Key to the list of components

The list of components contains the following information from left to right:

1. Component code (B1).
2. Designation and function (brake lamp switch).
3. Location diagram - identifies the location diagram that shows the location of the component (1).
4. Connection diagram (16:52-) for the basic electrical system. The sheet Nos. (01, 10) and the coordinate (A3) are given.
5. Circuit diagram 16:53- for the basic electrical system. Sheet No. (02) and current path No. (402) are given.
6. Connection diagram (16:54-) for optional equipment. The last two digits of the diagram are given.
7. Circuit diagram (16:55-) for optional equipment. The last two digits of the diagram are given.

Note: If the component is not listed in the table, see the booklet for the equipment in question.

Example

B. Make and break switches

B	Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
B1	Brake lamp switch	1	01, 10 - A3	02/402		
B16	Reversing lights, on the gearbox				20, 21, 22	

Make and break switches

B	Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
1	Brake lamp switch	2	01, 10 - A3	02/402		
16	Reversing lights, on the gearbox				20, 21, 22	
25	Accelerator pedal - idle speed				23, 33, 51	
26	Accelerator pedal - kickdown				23, 33, 51	
27	Clutch pedal, lower position				21, 22, 23	
32	Clutch pedal, upper position		10 - C4	02/395		
41	Acknowledgement switch for high range				21, 22	
42	Acknowledgement switch for low range				21, 22	
49	Foot switch for manual exhaust brake				30	
500	Neutral position				20, 21, 22	
501	Alarm switch for driver's gate		55			
502	Alarm switch for open battery box		52			
503	Alarm switch for open grille panel		52			
505	Alarm switch for open hatch to engine compartment, rear		56			
506	Alarm switch for open hatch to engine compartment, left		56			
507	Alarm switch for open hatch to engine compartment, right		56			

C. Connectors

C	No. of poles	Designation, function, etc.,	Loc. Diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
7	2			12 - C5	01		
22	9	Switch for windscreen wiper motor	2	10 - C2	02		
23	9	Switch for windscreen wiper motor	2	10 - C3	02		
46	2	Clutch pedal, lower position				21, 22, 23	
47	3	Clutch pedal, upper position		10 - B5	02		
56	18	Distribution block for CAN signals and diagnostics cables		10 - E7	01	31, 34, 40, 52, 53	52, 53
97	7	Opticruise				21, 22	
98	3	Retarder, potentiometer brake pedal	2			33, 34	
99	10	Gearbox				21, 22	
100	1	Gearbox				21, 22	
106	1	Opticruise, Comfort Shift				21, 22	
122	10	Mechanical gearbox				20	
142	7	Opticruise, Comfort Shift				21, 22	
155	2	Fuel shut-off	3	12 - C5	01	52	
193	2	Retarder temperature sensor				33	
194	2	Retarder temperature sensor				33	
202	2	Opticruise, CS, low range				22	
203	2	Opticruise, CS, high range				22	
239	8	EDC, embedded joint					

C. Connectors

C	No. of poles	Designation, function, etc.,	Loc. Diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
279	2	Flame start	3				55
500	17	Connector	1	11.5 - A8 F1	01	20, 21, 22, 23, 51, 52	20, 52
501	3x6	Connector	1	11 - A8	01	30, 33, 53	53
502	3x6	Connector	1	11 - A7	03	31, 40	
503	3x6	Connector	1	11 - A6	02		
504	17	Connector	1			21, 22, 23	
505	3x6	Connector	1			20, 21, 22, 23, 33	
506	17	Connector	1			33, 34	
507	17	Connector	1			40	
508	17	Connector	1			51	
512	1	Connector	1	10 - F1	03/560		
513	9	Connector	1			21, 22	
514	9	Connector	4	12 - E3	01	52	52
515	9	Connector	4	12 - E3	01	52	52
516	10	Connector		12 - C4	01		
517		Socket for inspection lamp	4	12 - E4	02/379		
518		Connector	4	11 - F3	02/337		
519	2	Connector	1	11 - C1	01		

C. Connectors

C	No. of poles	Designation, function, etc.,	Loc. Diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
520	9	Connector	1	11 - E1	02		
521	9	Connector	1	11 - E1	02		
522	9	Connector	1	11 - D1	01	31, 51	
523	9	Connector	1	11 - D1	02	31, 56	
524	1	Joining sleeve		10 - D6	03/473		
525		Junction block		10 - E4	02/229	23, 33, 34	
526	2	Connector	4	12 - F3	03		
529	1	Joining sleeve				21, 22	
530	5	Connector				23, 34	
531	3	Connector				23	
535		Socket for battery charging		11 - B5	01		
536	4	Connector	2	10 - A3	02		
540	2	Connector		11 - C1	01		
548	9	Connector				21, 22	
549	3	Connector				23	
552	7	Connector				23, 33, 51	
553	9	Connector		10 - C6	02/338		
554	9	Connector		10 - C6	02/330		
556	1	Terminal block		12 - B4	01/69	34	
558	7	Connector				51	

C. Connectors

C	No. of poles	Designation, function, etc.,	Loc. Diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
559	1	Connector		11 - F7	01/49	21, 22, 23	
560	1	Joining sleeve				31	
561	2	Connector				51	
590	9	Connector	1	11 - C1	03	20, 21, 22, 23, 40	20
591	3	Connector				22, 23, 33, 51	
594	2	Connector	4	12 - E3	01		
595	1	Joining sleeve				51	
596	2	Connector				51	
599	2	Connector				20	20
610	1	Connector				23, 51	
614	9	Connector		10 - B5	03	23	
619	9	Connector				40	
620	1	Joining sleeve		12 - B5	01/77		
625	1	Joining sleeve				23	
626	1	Joining sleeve				23	
627	3	Connector		11 - B2	01	51, 52, 56	52
649	1	Connector		10 - C5	02/335		

D. Diodes (d), resistors (r), potentiometers (p)

D	d/r/p	Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
35	p	Accelerator pedal sensor				23, 33, 51	
37	p	Brake pedal sensor				23, 33, 34	
500	d	Diode unit		11 - F8	01	30, 31, 33	
502	d	Zener diode		11 - F3	02/337		
503	p	Axle weight sensor				23	
508	d	Diode				33	
509	d	Diode unit				40, 44	
518	d	Diode				23	

E. Electronic control units

E	No. of poles	Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
1	16	Exhaust brake, white smoke limiter				22 ,30, 33	
5	55	Opticruise				22	
6		Hall-effect sensor for CS, Opticruise				21, 22	
8		Engine speed monitor, mechanical gearbox				20	
12	35	EDC				50	
13	25	SLD				54	
37		ABS				38	
39	55	Retarder				33	
500		Amplifier for road-speed signal		11 - F6	12/565		
501	55	Comfort Shift				21	
502	55	ZF automatic gearbox				23	
503	16	Scania Retarder				23, 34	
504	35	ELC, air suspension				44, 45	
505	55	E-gas				51	
506		Valve package, ZF automatic gearbox				23	
508		Solenoid, Telma retarder				34	

F. Fuses

F	For the basic electrical system		Designation, function, etc.,	Loc. dig.	Conn. diag., basic, 16:52-02-C/F-8	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-
	Marking	Amperes	Located in the central unit (P2)				
1	15A	10A	Instrument cluster/tachograph, amplifier for the road-speed signal				
2	15B	10A	Direction indicator, speed limiter				
3	15C	10A	Horn, relay for the starter interlock				
4	15D	10A	Retarder, EEB/white smoke limiter				
5	15E	10A	Gearbox				
6	15H	10A	Brake lamp, bus-stop brake				
7	15G	10A	Differential lock				
8	15F	20A	Windscreen wipers				
9	15K	10A	E-gas				
10	15L	10A	ELC air suspension				
11	15M	10A	15 supply to the body				
12	15N	10A	Switch-symbol illumination				
13	15P	10A	Relay for the coolant level, relay for the alternator				
14	30A	10A					
15	30B	10A	Gearbox				
16	30C	10A	Diagnostics socket, reversing lights				
17	30D	10A	Starter switch, relay for the position lamps				
18	15R	10A	ABS/TC				

F. Fuses

F	For the basic electrical system		Designation, function, etc.,	Loc. dig.	Conn. diag., basic, 16:52-02-C/F-8	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-
	Marking	Amperes	Located in the central unit (P2)				
19	30E	20A	EDC				
20	15V	10A	Flame start				20
21	15S	10A	ABS/TC				498
22	61A	10A	Charge-controlled circuits				65
23	15T	10A	ABS/TC				34
24	61C	10A	Automatic dipped beam				109
25	61D	10A	Relay for the battery master switch				313
26	58A	10A					240
27	58L	10A	Position lamp, left-hand side				252
28	58R	10A	Position lamp, right-hand side				260
29	58C	10A	Foglamps				232
30	56AL	10A	Main beam, left-hand side				263
31	56AR	10A	Main beam, right-hand side				265
32	56BL	10A	Dipped beam, left-hand side				273
33	56BR	10A	Dipped beam, right-hand side				275

F. Fuses

F	Fuses for equipment		Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53- 10	Conn. diag., optional, 16:54-
	Marking	Amperes	In the extra central electric unit, next to P2 (F1)				
34	BAT 1	10A	Relay for the battery master switch, instrument cluster				
35	BAT 2	10A	Direction indicators				
36	15X	10A	Fuel heater				
37	BAT 4	10A	Body				
38	BAT 5	10A	Body				
39	BAT 6	10A	Body				
			Fuses by the battery				
500	30	70A	Main fuse for 30 supply			10	
501	BAT	30A	Main fuse, direct supply			10	
507		355A	Starter cable			10/124	
			Fuses in the rear central electric unit				
502-1	C30	10A	30 supply, rear			10/93	
502-3	D+A	2A	Alternator 1 (P3) D+				
502-5	D+B	2A	Alternator 2 (P500) D+				
502-7							
503			Fire alarm			12/519	
504			Fire alarm			12/522	
505			Fire alarm			12/524	

G. Earth connections

G	Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
12	Earthing point in the extra central electric unit		01 - E8	10		
500	Earthing point in the frame		11 - B4	10		
501	Earthing point in the central electric unit		11 - F2	10	33, 34	
502	Earthing point in the instrument panel				21, 22, 23, 30, 31, 33, 34, 40, 51, 53	53
503	Earthing point in the frame		12 - D6	10	52	52
505	Earthing point in the central electric unit				21, 22, 23, 30, 33, 51	
508	Earthing point in the frame		12 - A6	10/68		
510	Earthing point in the frame		03 - E5			
511	Earthing point in the frame				34	
512	Earthing point in the frame				34	
513	Earthing point in the frame		02 -B1, 11 - B1	10/0		
518	Earthing point in the extra central electric unit		01 - E8, 10 - E8	10/4	31	
521	Earthing point in the instrument panel		01 - C3, 10 - C5	11	56	
523	Earthing point		01, 10 - B3			
529	Earthing point		01, 10 - B3	12		

H. Electrically heated equipment

H	Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
4	Air dryer		03 - C6, 12 - C6	10/108		

K. Diagnostics socket

K	Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
1	Diagnostics socket		01 - F7, 10 - F7	11/426	51	

L. Lamps

L	Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
18	Symbol lamp in the rheostat		10 - E4	11/233		
22	Symbol lamp in the light switch		10 - E4	11/231		
106	Symbol lamp for the retarder				33, 34	
501	Lighting in the engine compartment		03 - F5			
502	Lighting in the engine compartment		03 - E5			
503	Symbol lamp for the retarder				23	

M. Electric motors

M	Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
1	Starter motor		03 - A6, 12 - A6	10/66		
500	Control motor for E-gas				51	

O. Instruments

O	Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
3	Speedometer		01 - F1, 10 - F1	12/545	51	
4	Tachograph		01 - F1, 10 - F1		51	
500	Instrument cluster		01 - F3, 10 - F3	12/461	21, 22 , 23, 31, 33, 40, 51	

P. Power supply

P	Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
1	Batteries		02- B4, 11 - B4	10		
2	Central electric unit		02 - E8	10	20, 21, 22, 23, 30, 31, 33, 34, 40, 51, 52, 53	20, 52, 53
3	Alternator		03 - B6, 12 - B6	10/80		
500	Extra alternator		03 - B6	10/76		

R. Relays

R	Designation, function, etc., r.p. = relay position	Loc. diag. 1	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
1	Direction indicators, flasher relay		10 - D8	11/240		
2	Power relay for the starter motor - in the rear central electric unit		03 - F3, 12 - F3	10/63		
4	Main and dipped beams - r.p. 3		11 - E7	11/267		
8	Brake lamp - r.p. 7		02 - E5, 11 - E5	11/406	31, 33, 34, 51	
15	Front foglamp - r.p. 12		11 - E3	11/324		
19	Relay for supply from the alternator - r.p. 4		02 - E6, 11 - E6	10/97		
20	Relay for 15 supply - r.p. 1		02 - E8, 11 - E8	10/18		
21	Parking lights - r.p. 5		11 - E6	11/294		
22	Windscreen wiper interval - r.p. 6			11/356		
24	Reversing lights - r.p. 8		11 - E5	11/414	20	20
25	Rear foglamps - r.p. 13			11/318		
34	EDC - r.p. 9					
46	Fuel heater - r.p. 19					
500	Battery master switch - in the battery compartment		02 - B3, 11 - B3	10		
501	Battery master switch - in the battery compartment		02 - B3, 11 - B3	10/129		
502	Horn - r.p. 11		11 - E4	11/368		
506	Starter lock - r.p. 16		11 - F7	10/47	21, 22	
507	Engine stop - r.p. 20				51, 52	52
508	Extra alternator - r.p. 17		02 - F7, 11 - F7	10/96		
509	Bus-stop brake, disconnection - r.p. 31				31	
510	Warning lamp for the bus-stop brake - r.p. 32				31	
512	Coolant level - r.p. 34		01 - F7, 10 - F7	12/458		

R. Relays

R	Designation, function, etc., r.p. = relay position	Loc. diag. 1	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
513	Exhaust brake - r.p. 29				30	
514	CS delay relay - r.p. 24				21	
515	CS engaged - r.p. 25				21	
516	ZF delay relay for oil temperature - r.p. 24				23	
517	Oil temperature control				23	
519	Disconnecting the retarder				23	
520	ZF, parking brake on - r.p. 25				23	
521	ZF, Telma, brake lamp - r.p. 27				23, 34	
522	EDC, E-gas, brake signal - r.p. 21				51	
524	Retarder, reduced brake power				23	
525	Relay unit on the retarder				34	
526	Kneeling - r.p. 26				40	
531	ELC warning lamp - r.p. 33				40	
532	Dipped beam - r.p. 15		11 - F8	11/274		
533	Battery master switch		02 - B5			
535	White smoke limiter - r.p. 29				53	53

S. Switches

S	Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
1	Lighting		10 - E5	11/240		
2	Hazard warning lamps		10 - D1	11/238		
3	Heating fan					
4	Starter lock		01 - C1, 10 - C1	10/21	52	52
19	Instrument lighting		10 - E4	11/238		
24	Windscreen wipers and washers		10 - C2	11/349		
25	Switching from main to dipped beam, flashers		10 - C4	11/266		
26	Horn		10 - C4	11/368		
43	Retarder, potentiometer				33	
45	Retarder, downhill speed control				33	
48	ELC diagnosis				40	
51	Cruise Control				50	
52	EDC diagnosis				51	
63	High range/low range, in the gear lever				20	20
88	Opticruise diagnosis				22	
96	Retarder diagnosis				33	
100	Opticruise, programme selector Normal/Hill				22	
101	Opticruise, drive selector				22	
500	Battery master switch		10 - D4	10		
501	Disconnecting the tag axle				40	

S. Switches

S	Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
504	Lowering the bus level - to normal				40	
505	Rear foglamps		10 - D3	11/319		
507	White smoke limiter				30, 33, 53	53
508	Lighting in the engine compartment		03 - E4, 12 - E4	11/379		
509	Start front-0-start		03 - F4, 12 - F4	10/36		
510	Engine stop		03 - F4, 12 - F4	10/6	52	52
511	Engine stop		03 - F5			
513	Front foglamps		10 - D2	11/325		
514	Hand control for the retarder				23, 34	
515	Exhaust brake				30, 33	
516	Gearbox diagnosis				21, 23	
517	Mode selector				21	
518	Emergency gear changing				21	
519	Reverse gear				21	
520	Mode selector				23	
522	Raising/Lowering				40	
524	High idling speed				51	
525	Brake pedal switch for the retarder				23	
526	Brake pedal switch for the retarder				23, 33, 34	
582	Emergency stop				56	

T. Sensors (s) and monitors (m)

T	s/m	Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
1	s/m	Low brake pressure in the front circuit		01 - B2, 10 - B2	12/476		
2	s/m	Low brake pressure in the rear circuit		01 - B2, 10 - B2	12/481		
3	s	Parking brake on		01 - A2, 10 - A2	12/490	31, 53	53
4	m	Low brake pressure in the trailer parking brake		01 - B2, 10 - B2	12/486		
9	s/m	Engine oil pressure	4	03 - B6, 12 - B6	12/501		
16	s	Fuel level		02 - B5, 11 - B5	12/513		
17	s	Speed sensor, flywheel				20, 21, 22	20
20	s	Impulse sensor for the tachograph, on the gearbox	3	03 - B2, 12 - B2	12/546		
27	s	Outside temperature		01 - B3, 10 - B3	12/536		
63	s	Retarder coolant temperature 1				33	
64	s	Retarder coolant temperature 2				33	
77	s	Coolant temperature of the flame start					
501	m	Parking brake on		01 - A2, 10 - A2	12/493		
502	s	Bus-stop brake	3			31	
503	m	Coolant level		03 - D6, 12 - D6	12/460		
504	s	Coolant temperature, engine	3	03 - B6, 12 - B6	12/508		
505	s	Oil temperature, gearbox				23	
506	m	Monitor, rear brake applied				23	
511	s	Engine speed				51	
513	s	Level, front axle	2			40	

T. Sensors (s) and monitors (m)

T	s/m	Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
514	s	Level, rear axle	3			40	
515	s	Level, rear axle	3			40	
537	s	Fuel level		02 - B5, 11 - B5	12/516		
540	s	Inside temperature gauge			12/540		

V. Solenoid valves

V	Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
1	Exhaust brake, proportional valve				30, 33	
20	CS, Opticruise, lateral stroke - right-hand side				21, 22	
21	CS, Opticruise, lateral stroke - left-hand side				21, 22	
22	CS, Opticruise, neutral				21, 22	
23	CS, Opticruise, longitudinal stroke - rear				21, 22	
24	CS, Opticruise, longitudinal stroke - front				21, 22	
25	Exhaust brake, noise suppression				30, 33	
45	EDC, fuel shut-off		03 - C6, 12 - C6	10/9	52	52
63	Opticruise, low range				20, 21, 22	20
69	White smoke limiter	3			53	53
74	Retarder on/off				33	
75	Retarder, accumulator tank				33	
76	Retarder, proportional valve				33	
78	Opticruise, high range				21, 22	
500	Bus-stop brake	3			31	
501	Retarder, stage 1				23	
502	Retarder accumulator				23	
503	Retarder, stage 2				23	
504	Retarder, stage 3				23	
523	ELC valve block				40	

V. Solenoid valves

V	Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
524	ELC valve block	3			40	
525	ELC valve block, disconnecting the tag axle				40	

W. Warning lamps (w) and indicator lamps (i)

W	w/i	Designation, function, etc.,	Loc. diag.	Conn. diag., basic, 16:52-	Circuit diag., basic, 16:53-	Conn. diag., optional, 16:54-	Circuit diag., optional, 16:55-
55	i	Retarder active				33, 34	33, 34
505	w	ZF Retarder				23	

Wiring diagrams

There are two types of wiring diagram in the Scania Service Manual:

- Connection diagrams;
- Circuit diagrams.

Connection diagrams

Connection diagrams show the components that make up the electrical system and how they are connected to one another via the wiring system.

In each diagram, the components are depicted at rest, i.e., the switches have not been activated.

The connection diagram is build up as a system of coordinates. The horizontal axis runs from 1 - 8 and the vertical axis from A - F.

The connection diagram for the vehicle's basic equipment consists of three sheets:

- 1 the instrument panel and the front section: 16:52-01 for the CN chassis and 16:52-10 for the K/L/N chassis;
- 2 the front central electric unit: 16:52-02 for the CN chassis and 16:52-11 for the K/L/N chassis;
- 3 the rear central electric unit: 16:52-03 for the CN chassis and 16:52-12 for the K/L/N chassis.

The components in these diagrams are described in the list of components.

The connection diagrams for optionalequipment consist of one or two sheets depending on the size and complexity of the system (see page 28).

Note: The list of components for optional equipment is given in each diagram.

Connection diagrams

Section of the electrical system	Diagram No.	Insert No.
Basic electrical system		16:5
Front central electric unit, CN94	16:52-01	
Front central electric unit, KLN	16:52-10	
Central electric unit, CN94	16:52-02	
Central electric unit, CN94	16:52-11	
Rear central electric unit and engine compartment, CN94	16:52-03	
Rear central electric unit and engine compartment, KLN	16:52-12	
Optional equipment		16:4
Timing gear		16:54-2
Mechanical gearbox, KL	16:54-20	
Comfort Shift, KL	16:54-21	
Opticruise, K	16:54-22	
ZF automatic gearbox, NL	16:54-23	
Differential locks, KL	16:54-24	
Brakes		16:54-3
EEB exhaust brake, KL	16:54-30	
Bus-stop brake, KLN	16:54-31	
Scania Retarder, KL	16:54-33	
Telma Retarder, KL	16:54-34	

Wear indicator, KLN	16:54-35	
ABS/TC Wabco "D", CN94 4x2	16:54-37	
ABS/TC, KLN	16:54-38	
Chassis		16:54-4
ELC air suspension, CN	16:54-40	
ELC air suspension, CN	16:54-41	
Air suspension, KL	16:54-42	
Mechanical air suspension, KL	16:54-43	
ELC air suspension in an externally built body, KLN	16:54-44	
ELC air suspension in a Scania body, KLN	16:54-45	
ELC air suspension, CN94U	16:54-46	
Engine		16:54-5
EDC, K124	16:54-50	
E-gas, N	16:54-51	
Engine stop, KL	16:54-52	
White smoke limiter, KLN	16:54-53	
Speed limiter, KL	16:54-54	
Flame start, CN94	16:54-55	
Emergency stop, KL	16:54-56	
Steering		16:54-6
	16:54-60	
	16:54-61	

Circuit diagrams

Circuit diagrams show the electrical system divided into functional circuits. Each diagram displays the connection points of the components, from where they receive their voltage and the points at which they are earthed. The diagrams do not reveal the location of the components in the vehicle. Rather, their purpose is to show how the circuits are built up.

The components are placed in so-called current paths which run vertically in the diagrams. Each current path is marked with a number at the bottom of the diagram. The current path number acts as a reference point between the diagram and the list of components and the individual components in the diagram.

To avoid having cables running all over the diagrams, some of them have been "cut" and given a reference box. Each box has a current path number where the cable continues its course.

The circuit diagram consists of three sheets and is at present available for the basic electrical system only. Circuit diagrams have been included in some of the connection diagrams as and when space has permitted.

All circuits and functions in the basic electrical system are listed on page 31.

Note: På schemorna finns endast engelsk text.

Circuit diagram for the basic electrical system (16:53 -)

Sheet Nos. 10, 11 and 12 apply to KLN; 01, 02 and 03 to CN.

Circuit	Sheet No.	Current path
Engine stop	01, 10	10
Starter lock	01, 10	20
Starter button, rear	01, 10	40
Starter interlock	01, 10	50
Starter motor	01, 10	70
Alternators	01, 10	80
Alternator-controlled circuits	01, 10	100
Air dryer	01, 10	110
Socket for the battery charger	01, 10	120, 175
Batteries	01, 10	125, 180
Relay for the battery master switch	01, 10	140, 180
Fuses	01, 10	150, 200
Rheostat, instrument lighting	02, 11	235
Direction indicators	02, 11	250
Headlamps	02, 11	270
Main beam	02, 11	285
Dipped beam	02, 11	290
Position lamps	02, 11	305
Fog lamps	02, 11	320
Dimmed light in the switches	02, 11	340

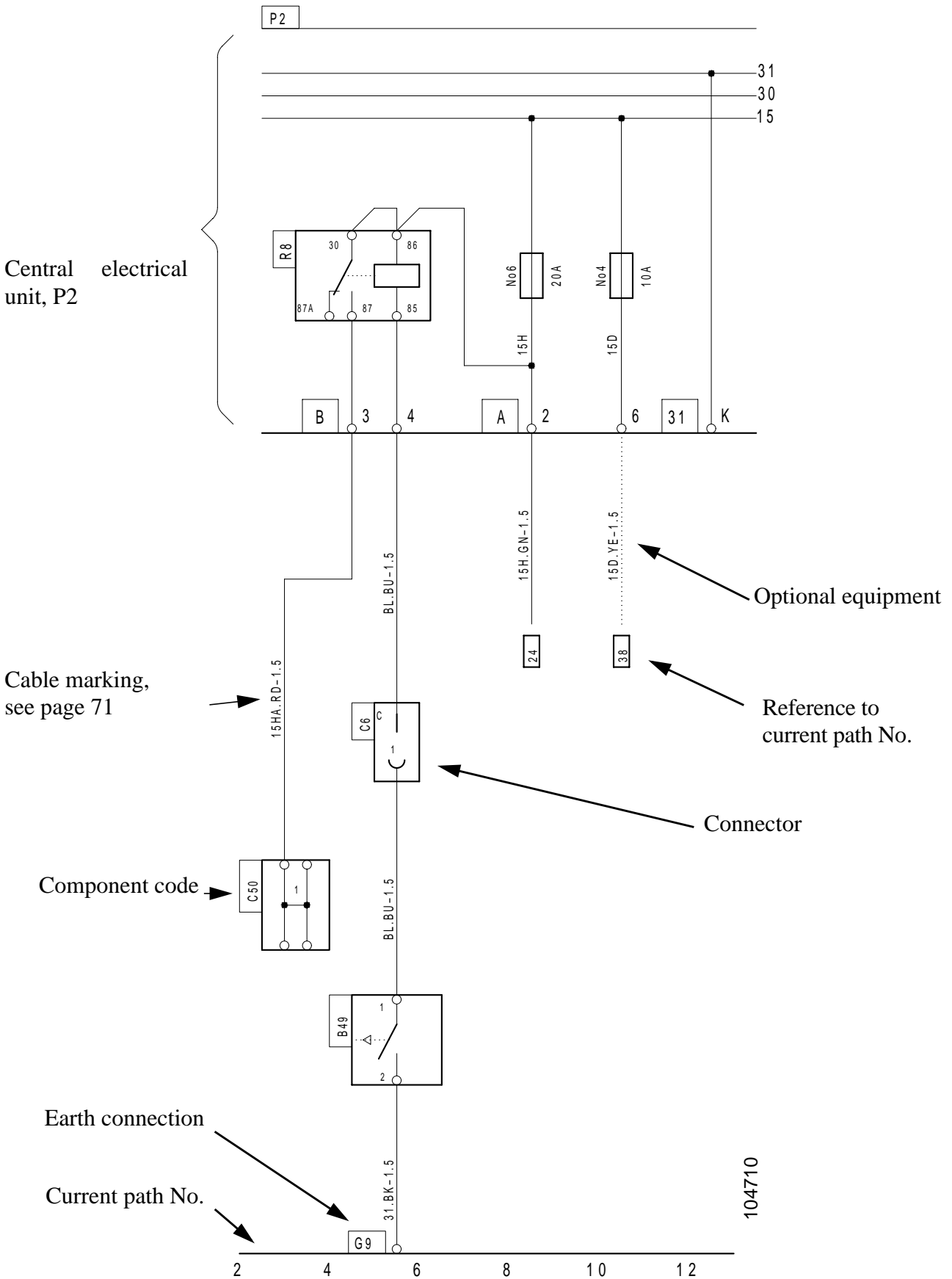
Circuit diagram for the basic electrical system (16:53 -)

Sheet Nos. 10, 11 and 12 apply to KLN; 01, 02 and 03 to CN.

Circuit	Sheet No.	Current path
Horn	02, 11	370
Inspection lamp socket	02, 11	380
Clutch	02, 11	395
Brake signal	02, 11	400
Reversing lights	02, 11	420
Diagnostics socket	02, 11	430
Coolant level	03, 12	450
Brake pressure sensor	03, 12	480
Parking brake	03, 12	490
Oil pressure	03, 12	500
Coolant temperature	03, 12	510
Fuel level	03, 12	515
Fire alarm	03, 12	520
Indicator lamps for the coach-builder	03, 12	530
Outside temperature gauge	03, 12	535
Inside temperature gauge	03, 12	540
Tachograph, speedometer	03, 12	550
Amplifier for road-speed signal	03, 12	640

Circuit diagram for the basic electrical system

Explanation of the symbols in the diagram



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Cable markings

General

The cables in the wiring diagram are marked according to a system based on function, colour and cross-sectional area (if other than 0.75 mm).

Each marking contains information on where the cable is connected (its address).

Example of a cable marking in the wiring diagram

15D. BN —1 + P2/8 —4

15D	Function
BN	Colour
1	Cross-sectional area of the cable in mm ² . <u>Note:</u> The standard cross-section of 0.75 mm ² is not given in the diagram.
+ P2	Reference to the component to which the cable is connected.
8	Contact housing No.
4	Pin No.

Colours

BK	Black	YE	Yellow
BN	Brown	RD	Red
OG	Orange	GN	Green
BU	Blue	VT	Violet
GY	Grey	WH	White
PK	Pink		

Some cables are marked with two colours, for instance, YE/WH. The table above lists all the colours used.

Marking	Function
15	Relay for pull solenoid, light switch
15/1	Starter lock, light switch
15A	Instrument cluster, tachograph, trip gauge and temperature gauge
15B	Hazard warning lamp, SLD
15CB	Brake lamp, ELC
15CC	Reversing light
15D	Exhaust brake, white smoke limiter
15DA	Exhaust brake, white smoke limiter
15E	Gearbox over-revving protection
15EL	Splitter interlock
15ER	High/Low - Range
15ES	High/Low - Splitter
15EV	High/Low - Range
15F	Windscreen wiper and washer, headlamp wiper
15FA	Windscreen wiper motor
15FB	Windscreen wiper motor
15FC	Headlamp washer
15FD	Headlamp washer
15FJ	Windscreen wiper switch
15FS	Windscreen wiper switch
15G	Tag axle lift, differential lock
15GD	Differential lock
15GF	Differential lock, independent operation
15HA	Exhaust brake
15HB	ABS
15HC	Reversing light
15K	Horn, heating fan
15KA	AC
15KB	ETC

Marking	Function
15KC	Fan switch resistor
15KD	Fan switch resistor
15KE	Fan switch position 0
15KF	Fan switch, fan
15KG	Fan switch position 4
15KH	Fan switch resistor
15KJ	Fan switch
15L	Air suspension, retarder, brake reduction
15LA	Retarder, ABS
15LG	Air suspension, emptying the bellows on the tag axle
15LH	Air suspension, rear bellows down
15LL	Air suspension, manual control
15LM	Air suspension, disconnecting the bellows on the tag axle
15LN	Air suspension, emptying the bellows on the tag axle
15LP	Air suspension, air pressure in the tag axle bellows
15LR	Air suspension, rear bellows up
15LX	Air suspension
15S	ABS control unit
15U	EDC control unit
15X/87	Gearbox, supply to fuse panels F1 and F2
15XA	EDC
15XAB	EDC
15XC	Automatic gearbox
15XD	Flame start
15XE	Fuel heater
15XF	Optional equipment
15XG	Optional equipment
15XH	ABS

Marking	Function
30	Battery +, starter motor, alternator, central electric unit, starter lock, light switch, hazard warning light, extra fuse panels F1 and F2
30+, 30-	Shunt in ammeter winding
30A	Trip gauge, temperature gauge, tachograph
30B	Inspection lamp socket, cigarette lighter
30D	Starter lock, voltage divider
30DA	Communications radio
30DM	Voltage divider
30E	Fuse panel
30EA	Engine control
30F	Short-stop heater, cab heater
30H	Flame start
30K	Fuel heater
31	Earth (ground connection)
31A	Tachograph, earth
31B	Windscreen wiper motor, earthing via a switch
49	Hazard warning lamp
49A	Hazard warning lamp, flasher sensor
50	Starter solenoid
50A	Starter solenoid
53	Windscreen wiper
53A	Windscreen and headlamp wiper
53B	Windscreen wiper
54L	Flasher, left
54R	Flasher, right
56	Light switch, main and dipped beam
56A	Main beam
56AL	Main beam (left), spotlight

Marking	Function
56ALA	Spotlamp
56AR	Main beam (right), indicator lamp for main beam
56B	Dipped beam
56BL	Dipped beam (left)
56BR	Dipped beam (right), foglamp (front)
56S	Light Switch
58	Parking light
58/87	Supply to fuse panel
58B	Hazard warning lamp, rheostat, trip gauge and temperature gauge
58BA	Rheostat, symbol illumination
58CA	Rear foglamp
58CB	Rear foglamp
58D	Optional equipment
58L	Parking light, left
58P	Parking light
58R	Parking light, right
61	Alternator, charge lamp, relay for starter solenoid
61/87	Supply to fuse panel F1
61A	Electrically heated rear-view mirrors
61AA	Electrically heated rear-view mirrors
61B	Opticruise
61C	Air dryer
61CA	Resistor for automatic dipped beam
61CB	Resistor for automatic dipped beam
61D	Fuel heater, flame start
61E	ACL
300	Differential locks
ABSWL	ABS warning lamp

Marking	Function
AF	Air filter
AS	Air suspension
B	Starter lock - fuse panel
BP	Brake pressure
BP1	Brake pressure, brake circuit 1
BP2	Brake pressure, brake circuit 2
BR	Exhaust brake
BRS	Brake pressure, inverted signal
BS	Boarding lamp
C	Indicator lamp, direction indicator
CAN	Control Area Network
CP	Clutch pedal, upper position
DBR	Retarder signal to ABS
DIAK	Diagnostics
DIAL	Diagnostics
DM	Starter solenoid
DS/DSB	Differential lock
EB1-4	Eberspächer
EBS	Exhaust brake
ELC1-34	ELC control unit
EXB	Exhaust brake
EXB1	Exhaust brake
EDC1-55	EDC control unit
F	Fan
FD	Switching between main and dipped beam
FH	Fuel heater
FL	Main beam flasher
FS	Flame start
GA	Automatic gearbox
GS	Engine speed sensor on the output shaft
GS1-2	Road-speed sensor

Marking	Function
FACTO	Fuel quantity - EDC
H	Horn
HB17	Tachograph
HO	Open rear hatch
HW	Hazard warning lamp
HWL	Hazard warning lamps, indicator lamp
K-DIA	Diagnostics
L-DIA	Diagnostics
L	Flasher, left
LB	ABS
LF	Flasher, front left
LR	Flasher, rear left
M1LI	ABS control valve, 1st axle left-hand side in
M2RO	ABS control valve, 2nd axle right-hand side out
M3RI	ABS control valve, 3rd axle right-hand side in
M2R31	ABS control valve, 2nd axle right-hand side earth
MH	Electrically operated rear-view mirrors
MV	Electrically operated rear-view mirrors
OP	Engine oil pressure
OPG	Engine oil pressure
OPC1-55	Opticruise gearbox
PH	Short-stop heater
PB	Parking brake
PWM	Accelerator pedal position, signal from EDC
R	Flasher, right
RA	Starter lock, to radio
RAA	Voltage converter for the radio

Marking	Function
RET 1-55	Retarder
RF	Flasher, front right
RL	Reversing light
RR	Flasher, rear right
RT	Flashers on the trailer, right
S2LI	ABS sensor, 2nd axle left-hand side in
SLD	Speed limiter
SS	Road-speed signal to C56/G1
SS6	Road-speed signal to SLD
T	Fuel level
TCI-3	TC, anti-spin control
TM	Trip gauge
W	Tachometer
WA	Webasto
WB	Webasto
WL	Coolant level
WTG	Coolant temperature
Z	Safety switch in the accelerator pedal sensor

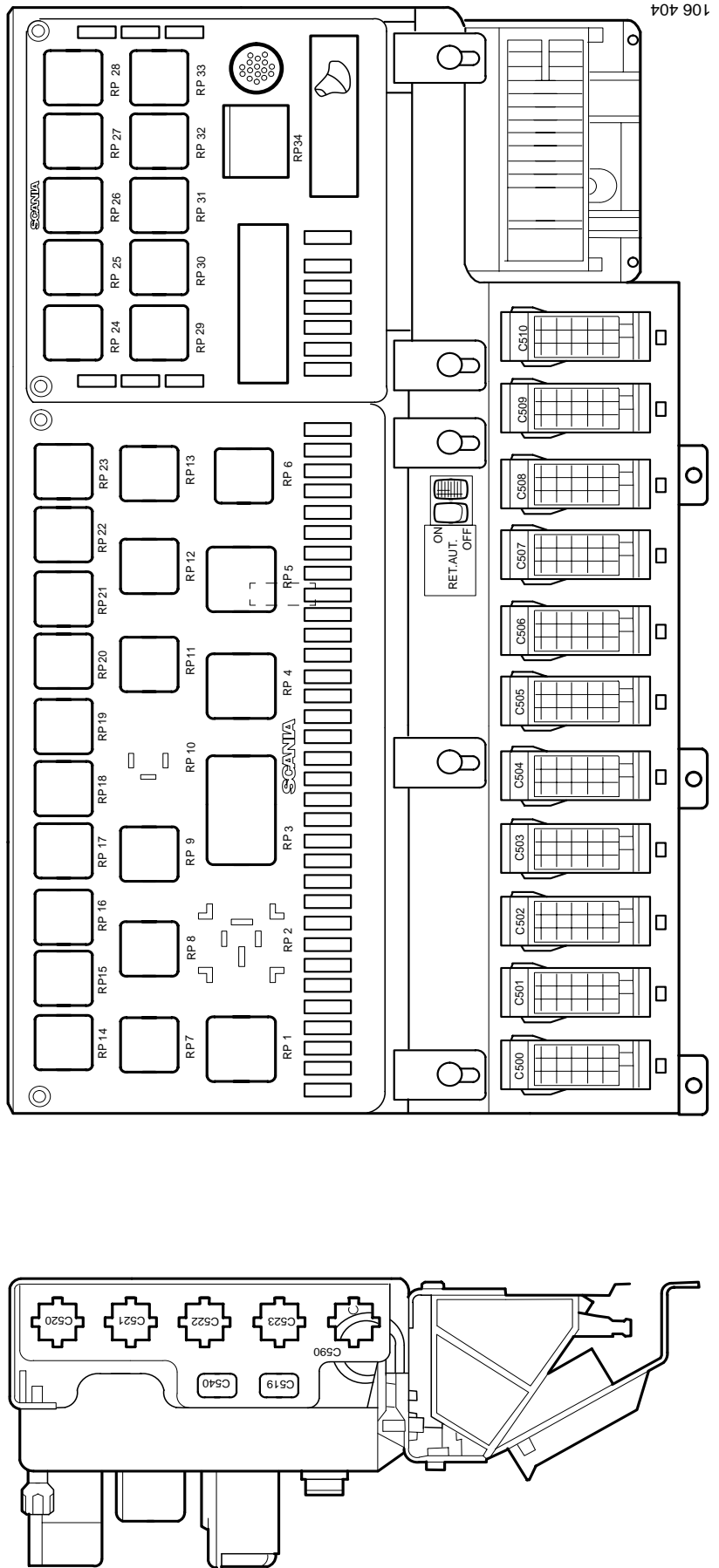
Bulbs

Code	Function	Socket	Power
A	Symbol illumination in the instruments	W2.1x95d	2W
B		BA9s	2W
C		BA15s	15W
D		SV8.5	5W
E		BA15s	10W
F	Position lamps, tail-lamps	BA15s	5W
G	Lamps in switches and heater controls, indicator lamps in the instrument cluster	W2x4,6d	1.2W
H	Flashers, reversing lights, stop lights, rear foglamps	BA15s	21W
K	H4 headlamps	P43t	75/70W
L	Bilux headlamps	P45t	55/50W
M	Lamps in switches and heater controls, indicator lamps in the instrument cluster	W2x4,6d	1.2W
N		BA7s	3W
P	H3 Spotlamps	PK22s	70W
R		BA15s	21W

Location diagrams

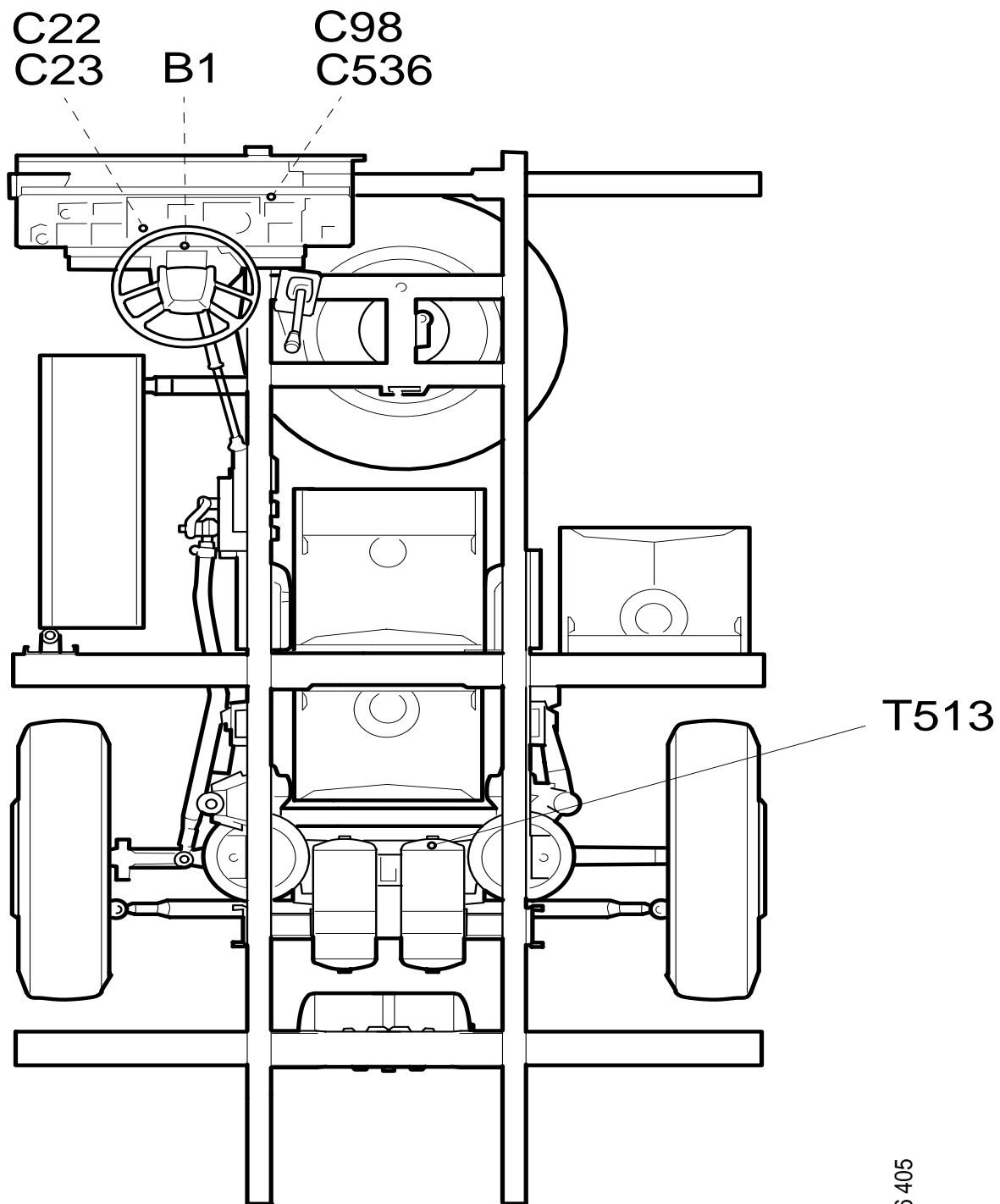
- 1 Front central electric unit
- 2 Electrics in the front section
- 3 Electrics in the rear section
- 4 Rear central electric unit

1. Front central electric unit



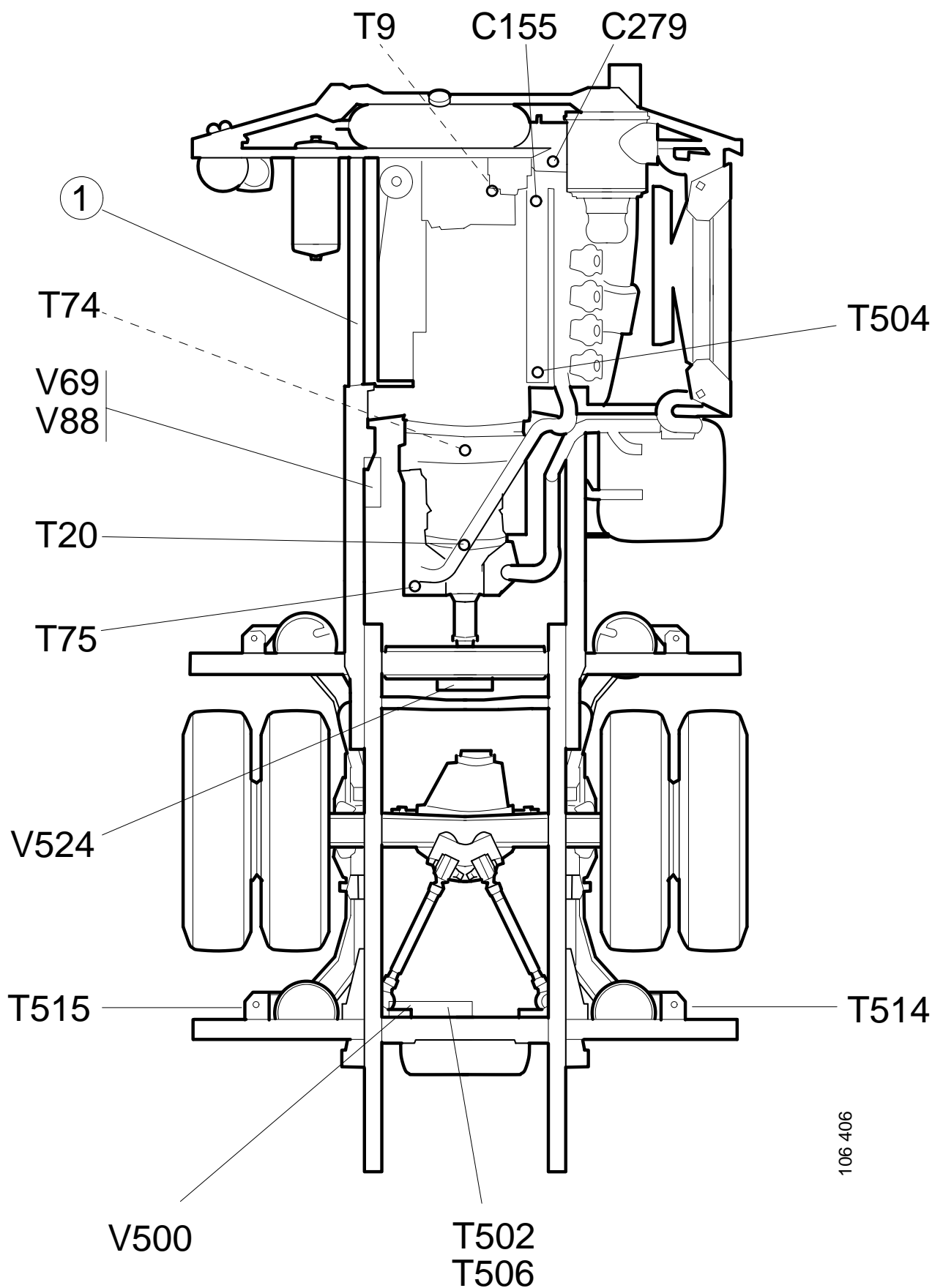
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2. Electrics in the front section

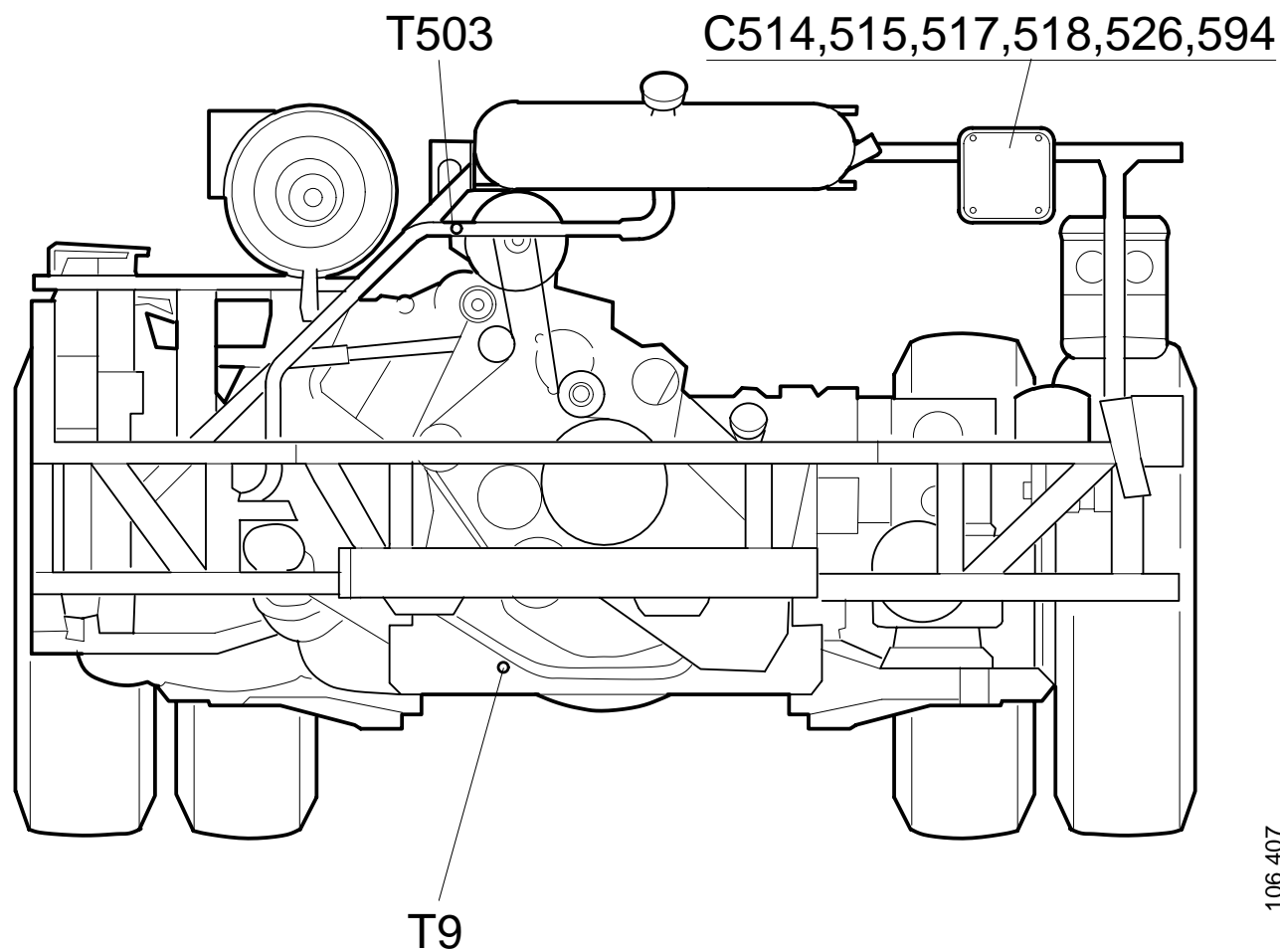


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3. Electrics in the rear section



4. Rear central electric unit



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