STRALIS circuit diagrams (BC2)



"This document provides data, characteristics, instructions and methodology to perform repair interventions on the vehicle and its components.

Anyhow, this document is addressed to qualified and specialised personnel. Iveco commercial and assistance network personnel as well as all Iveco authorised points of assistance are specifically qualified and equipped to perform the repair interventions that are indicated in this document.

Before performing any intervention, check to have available the document relating to the vehicle model on which the intervention is being performed and also make sure that all accident prevention devices, such as, as a rough guide, goggles, helmet, gloves, shoes, as well as work tooling, lifting and transport tooling, etc., are available and efficient, and further make sure that the vehicle is put such a way that an intervention can be made in safety conditions.

Making interventions strictly observing the indications given here, as well as using specific tooling indicated, assures a correct repair intervention, execution timing observance and operators' safety.

Each repair intervention must be finalised to the recovery of functionality, efficiency and safety conditions that are provided by lveco.

Each intervention, on the vehicle, that is finalised to a modification, alteration or else, which is not authorised by lveco, involves the exclusion of any responsibility for lveco, and, in particular, where the vehicle is covered by a guarantee, each such intervention involves an immediate lapse of the guarantee.

Responsibility for lveco in repair intervention execution is excluded.

lveco is available to provide all clarifications necessary to make interventions, as well as to provide indications in cases and situations not included in this document.

Data and information contained in this document could result not to be updated owing to modifications made by lveco at any moment for technical or commercial reasons, or because of the need to adapt the vehicle to law requirements in different countries.

In the case of a difference between what contained here and what actually found on the vehicle, please contact lveco network before making any intervention."

The data contained in this publication might fail to reflect the latest changes which the Manufacturer may introduce at any time, for technical or sales purposes, or to meet the requirements of local legislation.

Copy, even partial, of text and drawings is forbidden.

Publication Edited by: IVECO S.p.A. Customer Service Lungo Stura Lazio, 15 10156 Torino (TO) - Italy

Print 603.93.746 - Ist Ed. 2007

Produced by:



B.U. TECHNICAL PUBLISHING Iveco Technical Publications Lungo Stura Lazio, 15 10156 Torino (TO) - Italy

	Page
NEW FEATURES DUE TO THE INTRODUCTION OF BODY COMPUTER 2 (BC2)	3
CAN LINES	Z
CAN LINE ASSEMBLY DRAWING	10
DIAGNOSIS OUTLET	
OBD DIAGNOSIS CONNECTOR (BLUE)	12
RECEPTACLE CONNECTOR	15
REMOTE-CONTROL SWITCH / FUSE HOLDER CONTROL UNIT	20
SUPPLEMENTARY REMOTE SWITCHES	23
SUPPLEMENTARY FUSES (70000)	25
INSTRUMENT BOARD (AS)	27
CONTROLS ON THE CENTRAL BOARD (AS)	28
INSTRUMENT BOARD (AT/AD)	29
CONTROLS ON THE CENTRAL BOARD (AT/AD)	30
BODY COMPUTER 2 (BC2)	31
F.F.C R.F.C. (FRONT FRAME COMPUTER - REAR FRAME COMPUTER)	40
F.F.C. (SERVICES / ENGINE)	41
R.F.C	44
D.D.M. / P.D.M.	47
D.D.M. / P.D.M	48
P.D.M	49
D.D.M	50
B.M. (BED MODULE)	51
E.B.M. (EASY BED MODULE)	52
EDC (ECM) SYSTEMS	54
VCM (VEHICLE CONTROL MODULE) ELECTRONI CONTROL UNIT	C 58
EM (EXPANSION MODULE) ELECTRONIC CONTROL UNIT (PTO)	61

2 CIRCUIT DIAGRAMS (BC2)

Page

	i age
CENTRAL LOCKING WITH REMOTE CONTROL	64
	67
BLOCK DIAGRAM	4

NEW FEATURES DUE TO THE INTRODUCTION OF BODY COMPUTER 2 (BC2)
Functions moved from BC1, CM (now eliminated) and VCM:
Engine cranking
Some body builder sgnal
– Ext. Body Builder Cruise Control,
– Parking light,
– Parking brake.
Functions moved from CM to BC2:
U Window curtain,
Red lght,
Windscreen washer pump,
U Windscreen water low sensor,
Vehicle standstill signal for BB.
Functions eliminated from the Multiplex:
□ Rotating lights,
Front window heater,
Automatic snow chain.
Functions added to the Multiplex with BC2:
External Light signal / Emergency light for BB
KI5 low for frame computer (the KI5 with BC2 will be connected to Vbat instead of ground as BCI),
Seat belt inserted sensor (not used at the moment),
Fading white lights,
New bed spot lights,
Power preservation for production line and showroom, power management supplement shut off at very low battery,
Programmable spare I/O,
U KW2000 on CAN.
Apart from these changes to the MUX system, the connectors are being standardised for the Stralis, Trakker and Eurocargo bodybuilders.

CAN LINES

Dialogue between the Multiplex system, vehicle systems, engine control unit, SCR system, radio and various setters is carried out by means of the CAN lines:

- BCB Body Control Bus
- UDB Vehicle Data Bus
- ECB Engine Control Bus
- □ ICB Instruments Cluster Bus
- DB Infotainment Data Bus
- FMB Fuhrpark Management Bus

BCB (Body Control Bus) communication line

Allows communication between the different electronic systems on the vehicle. This line does not regard directly the units on the VDB line but the units that carry out different onboard services.



VDB (Vehicle Data Bus) Communication Line

Allows the electronic systems on the vehicle to dialogue. The units connected to it are: Eurotronic Transmission, Retarder, EBS, Ecas, Diagnosis connector, VCM, Tachograph, ACC and EM This line also dialogues with the Cluster and the Body Computer. Figure 2 MTCO/DTCO BC2 م____0120 Diagnostic IC ACC Connector VDB EΜ ECAS II ABS/EBS II RETARDER -q120_r_p VCM **EUROTRONIC II** 113546 Features 250.000 (BIT/SEC) Data transmission speed Color of the wire Black List of Units Ref. Description MTCO Tachograph DTCO Digital Tachograph VCM Vehicle Control Module Unit IC Cluster BC2 Body Computer **Diagnostic Connector** 30 pole diagnosis connector ABS Unit ABS EBS II EBS II Unit RETARDER Intarder Unit ECAS II Pnuematic suspension unit **EUROTRONIC II** Eurotronic II automatic transmission unit ACC ACC (Adaptive Cruise Control) Unit EM **Expansion Module**







I.D.B. (Infotainment Data Bus) communication line Allows communication between the Cluster and the Radio. The messages sent are shown on the CLUSTER. Figure 5 م_____6 IC IDB RADIO 112282 **Technical features** 100.000 (BIT/SEC) Data transmission speed Color of the wire Blue List of Units Ref. Description Radio Radio IC Cluster





DIAGNOSIS OUTLET Diagnosis connector - 72021 Figure 8 l 0 Ô 1612 15201183 (+) 19⁽⁴⁾ 14/25 (3027 13 Q4) ((v)

||3302

DIAGNOSIS CONNECTOR (FRONT VIEW)

Pins 27,28,29,30 might be printed with different positions from those reported in this picture.

Pin	System	Function	Cable colour code
I	Free	-	-
2	EDC (ECM)	K	2298
3	Free	-	-
4	ABS / EBS + ECAS	K	2299
5	Free	-	-
6	Intarder / EM	К	2293
7	Free	-	-
8	Multiplex Control units	К	2295
9	Free	-	-
10	Heater / Air conditioner	К	2296
11	Service actuation Key to "MAR"	+ 15	8802
12	VCM	К	2292
13	Free	-	-
14	Cluster / tachograph	К	2994
15	Free	-	-
16	UREA (SCR system)	К	2257
17	Free	-	-
18	EUROTRONIC	К	2297
19	Free	-	-
20	Programming retarder EOL	-	3393
21	CAN H (VDB)	Н	Ws/Bi
22	CAN L (VDB)	L	Gn/Ve
23	Free	-	-
24	Free	-	-
25	Startup signal	-	8050
26	Signal ground	-	0050
27	Free	-	-
28	Speed signal (B7)	v	5540
29	Signal ground	31	0050
30	Positive	+ 30	7772

OBD DIAGNOSIS CONNECTOR (BLUE)				
Figure 9				
		OBD		
	q6p q5p q6p q5p q5p			
		113550		
	KEY SIDE CONNECTOR VIEW			
Pin	Function	Cable colour code		
	-	-		
3	-	-		
4	Ground	0000		
6	Signal ground CAN line H (ECB)	0050 White		
7	-	-		
8		-		
10	-	-		
	-	-		
13	-	-		
14	CAN line L (ECB)	Green		
15	Battery direct positive (+Batt)	- 7721		

STI4 junction connector - ECAS bodybuilders (cab)			
Figure 10			
	a second s		
	Ender the second se	101523	
	KEY SIDE CONNECTOR VIEW		
Din	Function	Cable colour	
1 111		code	
I	Power supply to liftable axle lowering or lifting switch	8445	
STI4A j	unction connector (blue) - for bodybuilders (cab)		
,	· · · · · · · · · · · · · · · · · · ·		
Figure			
		107554	
KEY SIDE CONNECTOR VIEW			
		Cable colour	
Pin	Function	code	
1	Engine start-up signal input	8892	
2	Engine turning off signal input	0151	
3	Stop lights signal for bodybuilders	1165	
4	Vehicle not in operation signal output	5515	
5	Parking brake engaged signal output	6656	
6	-	-	
7	Speed signal from tachograph	5155	
8	Engine condition (output signal) 0 V engine not in operation / 24 V engine in operation	7778	
9	Gearbox in neutral position signal	8050	
10	Reverse gear signal	2268	
11	Positive +15	8871	
12	Provision for Cruise Control SET +	8156	
13	Provision for Cruise Control SET -	8157	
14	Provision for Cruise Control OFF	8154	
15	Provision for Cruise Control KESUME	8155	
16	Provision Cruise Control (Internal /external choice)	0152	
1/			
10	$\begin{array}{c} Provision for PTO 2 control signal \end{array}$	0137	
20	Provision for PTO 3 control signal	0123	
21	Positive +30	7772	
1			

STI4B junction connector (blue) - for bodybuilders (cab)



KEY SIDE CONNECTOR VIEW

Pin	Function	Cable colour code
Ι	Signal for the second speed limiter	0172
2	-	-
3	Clutch status signal	9963
4	Programmable speed threshold indicator signal (PTS)	5542
5	Hazard light signal	1113
6	-	-
7	-	-
8	Engine rpm signal	5584
9	External light signal	3333

STI4C junction connector (grey) - for set up devices (Allison)





Brown bulkhead "B"

Yellow wall pass "C"

Pin	Function	Cable colour
Pin I 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	Function PTO 1 power take-off return signal Rear axle braking detection pressure sensor signal Locked power supply positive Front right ABS sensor Positive for front right ABS power supply solenoid valve PTO 1 solenoid valve power supply Positive for front right ABS release solenoid valve Central lized smearing system ground Central lized smearing system supply Rear right ABS sensor Rear right ABS sensor Rear right ABS sensor Positive for rear right hand side ABS power supply solenoid valve Consent for power take-off 1 (PTO1) Positive for rear right hand side ABS release solenoid valve Power take-off 2 (PTO2) return signal Power take-off 3 (PTO3) return signal Ground for shielding (EM, bodybuilders) Negative for hydraulic cab release control in the lifting phase Negative for rear axle ASR solenoid valve Positive for rear left hand si	Cable colour code 6131 6245 8847 5571 5571 9920 9131 9918 0000 8898 5573 5573 5573 9930 0391 9928 6132 9132 0392 6133 0999 0923 0392 6133 0999 0923 0392 6133 0999 0923 0392 9123 0260 9260 0393 7795 0400 9229 8403 9931 9919 5440 9921 5570 5570 5572 5572 0975 0000
36 37 38 39 40	Front left hand side ABS sensor Rear left hand side ABS sensor Negative wire from terminal 15 (EM, bodybuilders) ABS solenoid valve ground	5570 5572 5572 0975 0000

Blue wall pass "D"

Green wall pass "E"

Pin	Function	Cable colour
Pin I 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	Function CAN - L line (ECB) CAN - L line (ECB) CAN - L line (BCB) CAN - L line (BCB) K line - F.F.C. diagnosis Positive +15 from BC2 for FFC Terminal 15 generator power supply (presetting) EDC system diagnosis inciting switch power supply (presetting) EDC system diagnosis inciting switch power supply (presetting) ACC supply Free Free EDC control unit terminal 15 power supply Servo-assisted tilting hydraulic pump power supply Hydraulic cabin uncoupling (+ lowening) pump motor power supply CAN - L line (VDB) CAN - H line (BCB) K line - EDC diagnosis Starting motor (terminal 50) Compressor electromagnet (Valeo) SCR system supply SCR system supply SCR system supply Hordaulic abin and the low water level Electric pump power supply headlamp wipers Cooling water level signal Front rear-view mirror heating positive Free Windscreen washer control signal Positive for motor fan speed 2 electromagnet Ground enabling engine fan activation + 30 positive	Cable Colour code GN/VE VVS/BI 2998 0987 8876 0163 5163 8176 - 8015 7730 9029 GN/VE VVS/BI GN/VE VVS/BI 2298 8888 9993 7540 8540 2257 5521 8821 5520 5587 5527 8830 - 8886 5166 5187 0014 7151 7151

REMOTE-CONTROL SWITCH / FUSE HOLDER CONTROL UNIT

FUSES

Figure 16



113551

Black color fuse holder (70601)

Ref.	Function	Delivery (A)	Terminal
I	Terminal 15 for air conditioning / Heated prefilter / Radio 24V	5	+15
2	Food warmer + Fridge / BM / Diagnosis connector / OBD connector	10	+Batt
3	Tachograph / IC / Centralized locking (remote control)	5	+Batt
4	SWI	3	+30
5	Cigar lighter - 24V/I2V voltage reducer / Radio 24V	20	+30
6	Tilted cab / Drier / Water presence in fuel filter / ''Shut off' solenoid valve/	10	+15
	Projectors positioning		

Red color fuse holder (70602)

Ref.	Function	Delivery (A)	Terminal
I	ACC / Allison gearbox (AT/AD)	10	+15
2	Eurotronic II / Baruffaldi / Allison gearbox (AT/AD)	10	+30
3	Internal lighting / Tool compartment lights	5	+30
4	EBS / ABS - D BASIC	5	+15
5	EBS	15	+30
6	EBS / ABS - D BASIC	15	+30

Natural color fuse holder (70603)

Ref.	Function	Delivery (A)	Terminal
I	Driver door module (DDM) / AT/AD driver's electric window without DDM/PDM	20/15	+30/+15
2	Passenger door module (PDM) / AT/AD passenger's electric window without DDM/PDM	20/15	+30/+15
3	IC	10	+15
4	EDC (ECM)	30	+30
5	Body Computer	25	+30
6	Body Computer	25	+30

Print 603.93.746

Ref.	Function	Delivery (A)	Terminal
I	EM	15	+30
2	Air-conditioning system	15	+30
3	Air-conditioning system / IT / Navigation / Panel light (AS)	5	+30
4	Auxiliary heating	15	+30
5	Auxiliary heating	5	+30

Natural color fuse holder (70605)

6

VCM (Vehicle Control Module)

Ref.	Function	Delivery (A)	Terminal
I	EM	15	+30
2	Vehicle levelling	5	+15
3	Chassis level adjustment	7.5	+30
4	Decelerator with CAN / Headlight washer	10	+30
5	Decelerator with CAN / Retarder - Mirror heating (AT/AD)	10/15	+15
6	Heated seat / Central lubrication / IT / navigation / Centralized locking	7.5	+15

2 70401 ٦ В С D Ο Ο 70402 M ⊖ 1 e 7 T٢ Γ Е G F لعا 70404 Н к T Þ Ν Μ L **BODY COMPUTER** OBD 70403 0 Ρ R 70604 70605 \$ S А <u>_</u>

Figure 17

113552

+30

20



113552

Black color fuse holder (70401)

Ref.	Function	Delivery (A)	Terminal
I	Cabin tilting	25	+30
2	Cabin tilting	5	+30
3	Body builders	10	+30
4	Heated windscreen	25	+30

Black color fuse holder (70402)

Ref.	Function	Delivery (A)	Terminal
I	Heated windscreen	25	+30
2	12V internal lighting / 12V Reading lights / Navigation system/Telematic system	5	-
3	Heated prefilter	20	+30
4	KI5 for alternator	5	+15

Black color fuse holder (70403)

Ref.	Function	Delivery (A)	Terminal
-	EM	10	+30
2	EM	10	+30
3	Urea (SCR system) / EM / ACC	5	+15
4	Urea (SCR system)	15	15

Black color fuse holder (70404)

Ref.	Function	Delivery (A)	Terminal
I	Trailer ABS/EBS	10	+15
2	Sunblind AT/AD	7,5	+15
3	Fan for AT/AD Car Transporter air conditioner	25	+30
4	Free	-	-

SUPPLEMENTARY REMOTE SWITCHES Figure 19 F F IP 4 P 4 В С D О በ 2 3 Е G F Κ н T (\$) Μ Ν BODY COMPUTER OBD Р 0 R Ì€ S А 113553 Component Ref. Description code А _ В Water heater remote control switch 25337 С Allison gearbox remote-control switch AT/AD 25210 25545 Manual air conditioner remote-control switch D Manual air conditioner remote-control switch (compressor) (AS) 25332 Е Water heater remote-control switch 25325 F Allison gearbox remote-control switch AT/AD 25609 G 25544 Manual air conditioning remote-control switch 61000B н Cabin tilting diodes Т Manual air conditioning remote-control switch 25874 К Manual air conditioning remote-control switch 25310 L Remote control switch for IGC 25903 Μ Manual air conditioning remote-control switch 25322 Ν Manual air conditioning remote-control switch 25332B 0 61000A Diodes for cab tilt system 25327 Ρ Manual air conditioning remote-control switch R Manual air conditioning remote-control switch 25332A S Manual air conditioning remote-control switch (AS) 25314

Remote-control switches

Positioned behind the BODY COMPUTER.

Figure 20		
\bigcirc	GA GB GC GD GE GF GF GG	\bigcirc
		73672
Ref.	Description	Component code
GA	Heated prefilter remote-control switch	25825
GB	Remote-control switch (terminal 15), 50A	25213
GC	Starting remote-control switch (50), 40A	25200
GD	-	-
GE	Cabin tilting remote-control switch / Manual conditioning remote control switch (Car Transporter)	25906/25329
GF	Cabin tilting remote-control switch / Manual conditioning remote control switch (Car Transporter)	25722/25308
GG	Cabin tilting remote-control switch	25723
Positioned in con Figure 21	trol unit compartment, replacing the removed CM control unit	
		Component
Ket.	Description	code
BA	Headlight washer enablement relay	25740
BB	Timer for headlamp washer	66010
BC	-	-
BD	-	-
L	1. The second seco	

SUPPLEMENTARY FUSES (70000) They are located on the left side of the vehicle, next to the batteries and the TGC. The fuse compartment can be accessed by levering on the two springs available on cover (A). Figure 22 Õ Ø 0 II II, \bigcirc П 73656 ٦ 0 0 Ю C D 0 0 40 \bigcirc A 0 \bigcirc Ŕ bin А 11 Ø 49847 A. Auxiliary fuse holder

rigure 23		
	$\begin{array}{ c c c c c c c c c c c c c c c c c c $	
		49731
Ref.	Function	Delivery A
 2 3	R.F.C. (rear right light power supply) R.F.C. (rear left light power supply) F.F.C. (front right light power supply)	30 30 30

Ref.	Function	Delivery A
I	R.F.C. (rear right light power supply)	30
2	R.F.C. (rear left light power supply)	30
3	F.F.C. (front right light power supply)	30
4	F.F.C. (front left light power supply)	30
5	Current tap - ABS/EBS	30
6	Presetting	30

INSTRUMENT BOARD (AS) Figure 24 10 13 14 15 16 17 18 || |2 7 9 8 ø (CUZ) . 60) 6 - 19 (12V) - 20 120 ₿ 5 -O -21 22 3 2 4 ||3555

Ref.	Description
I	Revs counter
2	Coolant thermometer
3	Fuel level gauge
4	Speedometer
5	Headlamp trim control
6	External light switch
7	Fog light actuation switch
8	Auxiliary headlamp actuation switch
9	Rear fog light actuation switch
10	Optical indicator cluster
11	Optical indicator cluster
12	Display
13	Optical indicator cluster
14	Loading platform light actuation switch
15	Heated windscreen warning light
16	Heated windscreen actuation switch (OPT)
17	ASR actuation switch (if available)
18	Emergency light actuation switch
19	Speed limiter cut-in switch
20	12 V current tap
21	Cabin tilting enable switch
22	Switch for spotlights



INSTRUMENT BOARD (AT/AD) Figure 26 7 10 11 12 13 14 15 16 17 18 8 9 **(0)** . E) 19 63 6 ٢ 120 125 ø 5 000000 0000000 Ô 3 2 22 21 20 4 113557 Ref. Description I Revs counter 2 Coolant thermometer 3 Fuel level gauge 4 Speedometer 5 Headlamp trim control 6 External light switch 7 Fog light actuation switch 8 Auxiliary headlamp actuation switch 9 Rear fog light actuation switch 10 Optical indicator cluster 11 Optical indicator cluster 12 Display 13 Optical indicator cluster 14 Loading platform light actuation switch 15 Heated windscreen warning light 16 Heated windscreen actuation switch (OPT) 17 ASR actuation switch (if available) 18 Emergency light actuation switch

19 Cabin tilting electric circuit failure warning light

20 Parking brake

21Cab tilt enablement switch22Retarder on switch



I	Pickup help button (OPT)
2	Third axle lifting/lowering button (OPT)
3	Rotating lamps switch (OPT)
4	Power takeoff switch 1 (OPT)
5	Pneumatic horns
6	Sunshade curtain control (OPT)
7	Roof side roof lamps cabin lights control
8	Power takeoff 2 (OPT)
9	Central roof lamp cabin lights
10	Rearview mirrors heating
H	Allison gearbox oil high temperature warning light
lla	Liftable 3 rd axle warning light with cantilever
12	Switch for immediately connecting supplementary water heater (OPT)
13	Engine/cabin pre-heating selector (OPT)
14	Switch for connecting supplementary air heater (OPT - for manual version only)
15	Multipower power takeoff control (OPT)
16	Supplementary water heater thermostat (OPT)
17	Key switch for ECO - POWER function
18	Heating/venting or air conditioner controls (OPT)
19	12V current outlet
20	Control for electric hatch pit (OPT)
21	ARB - Anti Roll Back actuation switch (if available)
22	ACC
22a	Engine brake engagement switch
23	Lighter
24	30-pole outlet for diagnosis



The connector pin-out is viewed from the cabling side.

50242








Negative from the switch for cabin uncoupled during lowering

Door opening negative (passenger's side)

Sun curtain position (AS)

14

15

16

0922

0984 0974

61000B

85023

52035



Connector "J6A"



Ref.		Description	Component code	Cable color code
	I	Negative from the sunroof switch (closing)	53306	0971
	2	Positive +15 for RFC/FFC	86117/86118	0987
	3	Free	-	-
	4	Positive for red lights	-	4422
	5	Free	-	-
	6	Free	-	-
	7	Positive for spotlights (AS)	39036	4941
•	8	Free	-	-
A	9	Windscreen washer fluid level sensor	44035	5521
	10	Free	-	-
	11	Free	-	-
	12	Free	-	-
	13	Signal from headlamp trim control	52312	9936
	14	Free	-	-
	15	Free	-	-
	16	Cab tilt enablement signal	61000A	8128
	17	Free	-	-
	18	Free	-	-
	19	Free	-	-
	20	Free	-	-



16

Negative from the sunroof control switch (opening)

0970

53306



_		50007	
5	Negative from the parking light switch	52307	3333
6	Negative from front fog light switch	52304	2228
7	Free	-	-
8	Negative from rear fog light switch	53315	2284
9	Positive 30-pole	72021	8802
10	Negative from circle light switch	52009	2224
11	Negative for operator side door opening	85023	0064
12	Negative from supplementary light switch	52024	2229
13	Negative from the passenger's side door switch	53509	0003
14	Positive from key switch (15)	52502	8887
15	Negative from the driver's side door switch	53509	0893
16	Positive from windshield wiper unit	65000	8880
17	Negative from emergency light control switch	52302	1113
18	Positive for windscreen washer pump and headlight washer pump enablement	64000/25740	8886
19	Positive for instrument lighting	-	4442
20	Positive from windshield wiper unit	65000	8873
21	Positive for windshield wiper unit (low speed)	65000	8882
22	Positive for windshield wiper unit (high speed)	65000	8881



- unscrew the three control unit (A) supporting screws;
- disconnect the two connectors without removing cables from the connector seat.

F.F.C. (Services / Engine) Connector "JI"

Figure 39

$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

Ref.	Description	Component code	Cable colour code
I	Positive for right low-beam headlight	30001	2223
2	Positive for right high-beam headlight	30001	2221
3	Free	-	-
A 4	Free	-	-
5	Positive for left high-beam headlight	2219	
6	Positive for auxiliary lamp high-beam headlights	30010	2229
7	Positive for front fog lights	30011	2228
8	Positive for left low-beam headlight	30001	2231
I	Free	-	-
2	Positive for headlamp trim actuator	30100	9937
3	Free	-	-
4	Free	-	-
5	Free	-	-
6	Free	-	-
7	Positive for front and right-side indicator lights	32002-33001	1123
8	Positive for windscreen washer electric pump	64000	8886
9	Free	-	-
10	Free	-	-
11	Free	-	-
12	Free	-	-
13	Free	-	-
14	Free	-	-
15	Signal for headlamp trim actuator	30100	9936
B 6	Positive for front right dimmer	30001	3330
17	Free	-	-
18	Negative for headlamp trim actuator	30100	9935
19	Free	-	-
20	Free	-	-
21	Free	-	-
22	Free	-	-
23	Free	-	-
24	Positive for front and left-side indicator lights	32002- 33001	1129
25	Free	-	-
26	Free	-	-
27	Free	-	-
28	Free	-	-
29	Free	-	-
30	Free	-	-
31		-	-
32	Positive for front left dimmers	30001	3339

Figure 40 32 17 8 12 10	C	onnec	tor "J2"		
Ref. Description Component code Cable colour code 1 Positive from the light power supply fuse (left side) 70000 7904 2 Positive from the light power supply fuse (left side) 70000 7904 3 Positive from the light power supply fuse (left side) 70000 7904 3 Positive from the light power supply fuse (left side) 70000 7904 3 Positive from the light power supply fuse (left side) 70000 7904 5 Positive from the light power supply fuse (left side) 70000 7903 6 Tester K line 70000 7903 7 Chassis ground 0000 7903 8 Positive from the light power supply fuse (light side) 70000 7903 1 CAN - H line (BCB) . Gn/Ve Gn/Ve 2 CAN - H line (BCB) . Gn/Ve Gn/Ve 7 Positive from the fuel filter dogging signalling switch 42000 5531 . 10 Free 		Figure	a 40		
Ref. Description Component code Cable colour code 1 Positive from the light power supply fuse (left side) 70000 7904 2 Positive from the light power supply fuse (left side) 70000 7904 3 Positive from the light power supply fuse (left side) 70000 7903 4 Positive from the light power supply fuse (left side) 70000 7903 6 Free - - 0000 7 Chassis ground - 0000 7903 1 CAN - I line (BCB) - Ws/Bit - 2 CAN - I line (BCB) - Ws/Bit - 3 CAN - I line (BCB) - Ws/Bit - 4 CAN - Line (BCB) - - - 5 Free - - - - 6 Tester K line 7000 9987 - - - 7 Positive from the fuel filter clogging signalling switch 42700 5531 - - <t< th=""><th></th><th>0</th><th>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</th><th>— 6 — 1</th><th></th></t<>		0	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	— 6 — 1	
I Positive from the light power supply fuse (left side) 70000 7904 2 Positive from the light power supply fuse (left side) 70000 7904 3 Positive from the light power supply fuse (left side) 70000 7903 4 Positive from the light power supply fuse (left side) 70000 7903 6 Free - - 0000 7 Chassis ground - 0000 7903 6 Free - - 0000 7903 7 Chassis ground - 0000 7903 8 Positive from the light power supply fuse (right side) 70000 7903 1 CAN - H line (BCB) - Ws/Bi - - 2 CAN - H line (BCB) -<		Ref.	Description	Component code	Cable colour code
2 Positive from the light power supply fuse (right side) 70000 7904 3 Positive from the light power supply fuse (right side) 70000 7903 4 Positive from the light power supply fuse (left side) 70000 7903 6 Free - - 7 Chassis ground - 0000 8 Positive from the light power supply fuse (right side) 70000 7903 1 CAN - H line (BCB) - 0000 2 CAN - H line (BCB) - Ws/Bit 4 CAN - L line (BCB) - Gn/Ve 3 CaK - L line (BCB) - - 4 CAN - L line (BCB) - Gn/Ve 5 Free - - 6 Tester K line 72021 2998 7 Positive from the fuel filter clogging signalling switch 42700 5531 12 Free - - - 13 Free - - - 14			Positive from the light power supply fuse (left side)	70000	7904
3 Positive from the light power supply fuse (left side) 70000 7903 A 4 Positive from the light power supply fuse (left side) 70000 7903 6 Free - - 7 Chassis ground - - 9 Positive from the light power supply fuse (left side) 70000 7903 1 CAN - L line (BCB) - W/s/Bi 2 CAN - L line (BCB) - W/s/Bi 2 CAN - L line (BCB) - W/s/Bi 4 CAN - L line (BCB) - W/s/Bi 4 CAN - L line (BCB) - W/s/Bi 5 Free - - 6 Tester K line 72021 2998 7 Positive for engine oil level sensor 44043 5506 9 Free - - - 10 Free - - - 11 Negative from the fuel filter clogging signaling switch 420700 5531 12 Free </th <th></th> <th>2</th> <th>Positive from the light power supply fuse (left side)</th> <th>70000</th> <th>7904</th>		2	Positive from the light power supply fuse (left side)	70000	7904
A 4 Positive from the light power supply fuse (left side) 70000 7904 5 Positive from the light power supply fuse (left side) 70000 7903 6 Free - - 7 Chassis ground - 0000 8 Positive from the light power supply fuse (right side) 70000 7903 1 CAN - H line (BCB) - Ws/Bi 2 CAN - H line (BCB) - Gn/Ve 3 CAN - L line (BCB) - Gn/Ve 4 CAN - L line (BCB) - Gn/Ve 5 Free - - 6 Tester K line 72021 2998 7 Positive for engine oil level sensor 44043 5506 9 Free - - - 10 Free - - - 11 Negative from the fuel filter dogging signalling switch 42700 5531 12 Free - - - 13 Free - - - 14 Free -		3	Positive from the light power supply fuse (right side)	70000	7903
5 Positive from the light power supply fuse (left side) 70000 7903 6 Free - - 0000 7 Chassis ground - 0000 7903 1 CAN - H line (BCB) - W/k/Bit 2 CAN - L line (BCB) - W/k/Bit 3 CAN - L line (BCB) - Gn/Ve 4 CAN - L line (BCB) - Gn/Ve 5 Free - - 6 Tester K line 72021 2998 7 Positive for engine oil level sensor 44043 5506 9 Free - - - 10 Free - - - 11 Negative form the fuel filter clogging signalling switch 42700 5531 - 12 Free - - - - 13 Free - - - - 14 Free - - - - <th></th> <th>A 4</th> <th>Positive from the light power supply fuse (left side)</th> <th>70000</th> <th>7904</th>		A 4	Positive from the light power supply fuse (left side)	70000	7904
6 Free - - 0000 7 Chassis ground - 0000 7903 1 CAN - H line (BCB) - Ws/Bi 2 CAN - L line (BCB) - Gn/Ve 3 CAN - L line (BCB) - Gn/Ve 4 CAN - L line (BCB) - Gn/Ve 5 Free - - 6 Tester K line 72021 2998 7 Positive for engine oil level sensor 44043 5506 9 Free - - - 10 Free - - - 11 Negative from the fuel filter clogging signalling switch 42700 5531 12 Free - - - 13 Free - - - 14 Free - - - 15 Free - - - 14 Free - - - 15 Free - - - 16		5	Positive from the light power supply fuse (left side)	70000	7903
7 Chassis ground - 0000 8 Positive from the light power supply fuse (right side) 70000 7903 1 CAN - H line (BCB) - Ws/Bi 2 CAN - L line (BCB) - Gn/Ve 3 CAN - L line (BCB) - Gn/Ve 4 CAN - L line (BCB) - Gn/Ve 5 Free - - 6 Tester K line 72021 2998 7 Positive for engine oil level sensor 44043 5506 9 Free - - - 10 Free - - - 11 Negative forom the fuel filter clogging signalling switch 42700 5531 12 Free - - - 13 Free - - - 14 Free - - - 15 Free - - - 16 Free - - - 17 Free - - -		6	Free	-	-
8 Positive from the light power supply fuse (right side) 70000 7903 1 CAN - L line (BCB) - Ws/Bi 2 CAN - L line (BCB) - Gn/Ve 3 CAN - L line (BCB) - Ws/Bi 4 CAN - L line (BCB) - Gn/Ve 5 Free - - 6 Tester K line 72021 2998 7 Positive from BC2 86116 0987 9 Free - - - 10 Free - - - 11 Negative from the fuel filter dogging signalling switch 42700 5531 12 Free - - - 13 Free - - - 14 Free - - - 15 Free - - - 16 Free - - - 17 Free - - - <		7	Chassis ground	-	0000
1 CAN - H line (BCB) - Wys/Bi 2 CAN - L line (BCB) - Gn/Ve 3 CAN - L line (BCB) - Gn/Ve 5 Free - - 6 Tester K line 72021 2998 7 Positive +15 from BC2 86116 0987 8 Positive for engine oil level sensor 44043 5506 9 Free - - 10 Free - - 11 Negative from the fuel filter clogging signalling switch 42700 5531 12 Free - - - 13 Free - - - 14 Free - - - 15 Free - - - 16 Free - - - 17 Free - - - 18 Negative from the front shoe wear signalling sensor 86002 6664 19 Free - - - 21 F		8	Positive from the light power supply fuse (nght side)	70000	/903
2 CAN - Hine (BCB) - Ws/Bi 3 CAN - Hine (BCB) - Gn/Ve 5 Free - - 6 Tester K line 72021 2998 7 Positive +15 from BC2 86116 0987 8 Positive for engine oil level sensor 44043 5506 9 Free - - 10 Free - - 11 Negative for ongine oil level sensor 44043 5506 9 Free - - 10 Free - - 11 Negative from the fuel filter clogging signalling switch 42700 5531 12 Free - - - 13 Free - - - 15 Free - - - 16 Free - - - 17 Free - - - 18 Negative from the front shoe wear signalling sensor 86002 6664 19 Free <td< th=""><th></th><th>1</th><th>CAN - H line (BCB)</th><th>-</th><th>vvs/Bi</th></td<>		1	CAN - H line (BCB)	-	vvs/Bi
4 CAN - 1 line (BCB) - Gr/Ve 4 CAN - Line (BCB) - - 6 Tester K line 72021 2998 7 Positive +15 from BC2 86116 0987 9 Free - - 10 Free - - 11 Negative for engine oil level sensor 44043 5506 9 Free - - 11 Negative from the fuel filter dogging signalling switch 42700 5531 12 Free - - - 13 Free - - - 14 Free - - - 15 Free - - - 16 Free - - - 17 Free - - - 18 Negative from the font shoe wear signalling sensor 86002 6664 19 Free - - - 20 Free - - - 21 Free		2	CAN - L line (BCB)	-	Gn/ve \\/c/Bi
5 Free - - 6 Tester K line 72021 2998 7 Positive +15 from BC2 86116 0987 8 Positive for engine oil level sensor 44043 5506 9 Free - - 10 Free - - 11 Negative from the fuel filter clogging signalling switch 42700 5531 12 Free - 00000 13 Free - - 14 Free - - 15 Free - - 16 Free - - 17 Free - - 18 Negative from the front shoe wear signalling sensor 86002 6664 19 Free - - - 20 Free - - - 21 Free - - - 22 Free - - - 23 Negative from the indicator power assisted steering low fluid level 44037		3 4	CAN - Hille (BCB)	-	Gn/Vo
6 Tester K line 72021 2998 6 Tester K line 72021 2998 7 Positive +15 from BC2 86116 0987 8 Positive for engine oil level sensor 44043 5506 9 Free - - 10 Free - - 11 Negative from the fuel filter clogging signalling switch 42700 5531 12 Free - - 00000 13 Free - - - 14 Free - - - 15 Free - - - 16 Free - - - 17 Free - - - 18 Negative from the front shoe wear signalling sensor 86002 6664 19 Free - - - 20 Free - - - 21 Free - -		5	Free		
7Positive HIS from BC28611609878Positive for engine oil level sensor4404355069Free10Free11Negative from the fuel filter clogging signalling switch42700553112Free0000013Free14Free15Free16Free17Free18Negative from the front shoe wear signalling sensor86002666419Free20Free21Free22Free23Negative from the indicator power assisted steering low fluid level44037552524Signal from alternator (L)25Free26Free27Free28Free29Free30Free31Free32Signal from engine oil pressure sensor440435505		6	Tester K line	72021	2998
8Positive for engine oil level sensor4404355069Free10Free11Negative from the fuel filter clogging signalling switch42700553112Free-0000013Free14Free15Free16Free17Free18Negative from the front shoe wear signalling sensor86002666419Free20Free21Free22Free23Negative from the indicator power assisted steering low fluid level44037552524Signal from alternator (L)03000700925Free27Free28Free29Free30Free31Free32Signal from engine oil pressure sensor33Signal from engine oil pressure sensor3440435505		7	Positive +15 from BC2	86116	0987
9Free10Free11Negative from the fuel filter clogging signalling switch42700553112Free-000013Free-000014Free15Free16Free17Free18Negative from the front shoe wear signalling sensor86002666419Free20Free21Free22Free23Negative from the indicator power assisted steering low fluid level44037552524Signal from alternator (L)03000700925Free27Free28Free29Free30Free31Free32Signal from engine oil pressure sensor440435505		8	Positive for engine oil level sensor	44043	5506
InterviewInterviewInterview10FreeInterviewInterview11Negative from the fuel filter clogging signalling switch42700553112FreeInterviewInterview13FreeInterviewInterview14FreeInterviewInterview15FreeInterviewInterview14FreeInterviewInterview15FreeInterviewInterview16FreeInterviewInterview17FreeInterviewInterview18Negative from the front shoe wear signalling sensor86002666419FreeInterviewInterview20FreeInterviewInterview21FreeInterviewInterview22FreeInterviewInterview23Negative from the indicator power assisted steering low fluid level44037552524Signal from alternator (L)InterviewInterview25FreeInterviewInterviewInterview26FreeInterviewInterviewInterview27FreeInterviewInterviewInterview28FreeInterviewInterviewInterview30FreeInterviewInterviewInterview31FreeInterviewInterviewInterview32Signal from engine oil pressure sensorInterviewInterview33S		9	Free	-	-
11Negative from the fuel filter dogging signalling switch42700553112Free-000013Free14Free15Free16Free17Free18Negative from the front shoe wear signalling sensor86002666419Free20Free21Free23Negative from the indicator power assisted steering low fluid level44037552524Signal from alternator (L)03000700925Free26Free27Free28Free30Free31Free31Free31Free32Signal from engine oil pressure sensor440435505		10	Free	-	_
12 Free - 0000 13 Free - - 14 Free - - 15 Free - - 15 Free - - 17 Free - - 18 Negative from the front shoe wear signalling sensor 86002 6664 19 Free - - 20 Free - - 21 Free - - 22 Free - - 23 Negative from the indicator power assisted steering low fluid level 44037 5525 24 Signal from alternator (L) 03000 7009 25 Free - - 26 Free - - 27 Free - - 28 Free - - 29 Free - - 30 Free - - 31 Free - - 31 Free -		11	Negative from the fuel filter clogging signalling switch	42700	5531
13Free14Free15Free15Free17Free18Negative from the front shoe wear signalling sensor86002666419Free20Free21Free23Negative from the indicator power assisted steering low fluid level44037552524Signal from alternator (L)03000700925Free26Free27Free28Free30Free31Free32Signal from engine oil pressure sensor440435505		12	Free	-	0000
14 Free - - 15 Free - - 16 Free - - 17 Free - - 18 Negative from the front shoe wear signalling sensor 86002 6664 19 Free - - 20 Free - - 21 Free - - 22 Free - - 23 Negative from the indicator power assisted steering low fluid level 44037 5525 24 Signal from alternator (L) 03000 7009 25 Free - - 26 Free - - 27 Free - - 28 Free - - 29 Free - - 30 Free - - 31 Free - - 32 Signal from engine oil pressure sensor - -		13	Free	-	-
ISFreeB 16Free17Free18Negative from the front shoe wear signalling sensor86002666419Free20Free20Free21Free22Free23Negative from the indicator power assisted steering low fluid level44037552524Signal from alternator (L)03000700925Free26Free27Free28Free29Free30Free31Free32Signal from engine oil pressure sensor440435505		14	Free	-	-
B 16Free17Free18Negative from the front shoe wear signalling sensor86002666419Free20Free21Free22Free23Negative from the indicator power assisted steering low fluid level44037552524Signal from alternator (L)03000700925Free26Free27Free28Free29Free30Free31Free32Signal from engine oil pressure sensor440435505		15	Free	-	-
17Free-18Negative from the front shoe wear signalling sensor86002666419Free20Free21Free22Free23Negative from the indicator power assisted steering low fluid level44037552524Signal from alternator (L)03000700925Free26Free27Free28Free29Free30Free31Free32Signal from engine oil pressure sensor440435505		B 6	Free	-	-
18Negative from the front shoe wear signalling sensor86002666419Free20Free21Free22Free23Negative from the indicator power assisted steering low fluid level44037552524Signal from alternator (L)03000700925Free26Free27Free28Free30Free31Free32Signal from engine oil pressure sensor440435505		17	Free	-	-
19Free20Free21Free22Free23Negative from the indicator power assisted steering low fluid level44037552524Signal from alternator (L)03000700925Free26Free27Free28Free29Free30Free31Free32Signal from engine oil pressure sensor440435505		18	Negative from the front shoe wear signalling sensor	86002	6664
20Free21Free22Free23Negative from the indicator power assisted steering low fluid level44037552524Signal from alternator (L)03000700925Free26Free27Free28Free29Free30Free31Free32Signal from engine oil pressure sensor440435505		19	Free	-	-
21Free22Free23Negative from the indicator power assisted steering low fluid level44037552524Signal from alternator (L)03000700925Free26Free27Free28Free29Free30Free31Free32Signal from engine oil pressure sensor440435505		20	Free	-	-
22Free23Negative from the indicator power assisted steering low fluid level44037552524Signal from alternator (L)03000700925Free26Free27Free28Free29Free30Free31Free32Signal from engine oil pressure sensor440435505		21	Free	-	-
23Negative from the indicator power assisted steering low fluid level44037552524Signal from alternator (L)03000700925Free26Free27Free28Free29Free30Free31Free32Signal from engine oil pressure sensor440435505		22	Free	-	-
24 Signal from alternator (L) 03000 7009 25 Free - - 26 Free - - 27 Free - - 28 Free - - 29 Free - - 30 Free - - 31 Free - - 32 Signal from engine oil pressure sensor 44043 5505		23	Negative from the indicator power assisted steering low fluid level	44037	5525
25 Free - - 26 Free - - 27 Free - - 28 Free - - 29 Free - - 30 Free - - 31 Free - - 32 Signal from engine oil pressure sensor 44043 5505		24	Signal from alternator (L)	03000	/009
20 rree - - 27 Free - - 28 Free - - 29 Free - - 30 Free - - 31 Free - - 32 Signal from engine oil pressure sensor 44043 5505		25		-	-
27 rree - - 28 Free - - 29 Free - - 30 Free - - 31 Free - - 32 Signal from engine oil pressure sensor 44043 5505		26		-	-
20rree29Free30Free31Free32Signal from engine oil pressure sensor440435505		2/		-	-
2711 ce30Free31Free32Signal from engine oil pressure sensor440435505		∠ຽ ວວ		-	-
30 Free - - 31 Free - - 32 Signal from engine oil pressure sensor 44043 5505		27 20		-	-
32 Signal from engine oil pressure sensor 44043 5505		20		-	-
		32	Signal from engine oil pressure sensor	44043	5505

R.F.C.

Located in the vehicle center on the right side. Follow the F.F.C. center instructions for removal.

Figure 41

A. R.F.C. electronic center

R.F.C. (chassis) Connector "JI"	32 7 8
Figure 42	

Ref.	Description	Component code	Cable colour code
	Free	-	-
2	Positive +15 for bodybuilders	-	8871
3	Positive for trailer / right side clearance light	33004	3330
A 4	Positive for trailer / left side clearance light	33004	3339
5	Free	-	-
6	Positive for trailer brake lights	72010	1179
7	Positive for trailer reversing lights	72010	2226
8	Free	-	-
l	Free	-	-
2	Free	-	-
3	Negative of switch for transmission in neutral position	53508	8050
4	Negative of switch for lighting reverse gear lights	53503	2268
5	Negative of switch for signalling reduced speed-gear engaged	53507	9992
6	Negative of switch for signalling clogged air filter	42351	6663
7	Positive for the trailer right direction light	72010	1185
8	Free	-	-
9	Front sensor air pressure signal (APU)	-	5562
10	Rear sensor air pressure signal (APU)	-	5561
11	Negative of the switch signalling trailer braking circuit failure	42111	6689
12	Free	-	-
13	Positive for brakes pressure sensors and shoes wear	61104	5560
14	Positive from fuel level sensor	4403 I	5557
15	Free	-	-
B 6	Positive for light illuminating the fifth wheel	34011	2224
17	Return from fuel level sensor	4403 I	5555
18	Free	-	-
19	Free	-	-
20	Free	-	-
21	Free	-	-
22	Free	-	-
23	Free	-	-
24	Positive for the trailer left direction light	72010	1180
25	Free	-	-
26	Free	-	-
27	Free	-	-
28	Free	-	-
29	Free	-	-
30	Signal from the sensor signalling water in Diesel oil filter	86013	5530
31	Free	-	-
32	Positive for trailer rear fog-lights	72010	2283

R.F.C. Connector "J2"

Figure 43

Ref	Description	Component code	Cable colour
i cen	Description	Component code	code
I	Positive from the light power supply fuse (left side)	70000	7902
2	Positive from the light power supply fuse (left side)	70000	7902
3	Positive from the light power supply fuse (right side)	70000	7901
A 4	Positive from the power supply fuse (left side)	70000	7902
5	Positive from the power supply fuse (right side)	70000	7901
6	Positive for external lights (body builders)	ST 52/3	3333
7	Chassis ground	-	0000
8	Positive from the power supply fuse (right side)	70000	7901
I	CAN - H line (BCB)	-	Ws/Bi
2	CAN - L line (BCB)	-	Gn/Ve
3	Free	-	-
4	Free	-	-
5	Positive for the rear left indicator lights	34000	1120
6	K line (diagnosis connector)	72021	2999
7	Positive +15 from BC2	86116	0987
8	Positive for left brake lights	34000	1175
9	Free	-	-
10	Positive for rear fog lamps	34000	2283
11	Free	-	-
12	Negative from the 3 rd axis shoe wear signalling sensor	86003	6664
13	Positive for right brake light	34000	1175
14	Positive for rear right dimmer	34000	1125
15	Positive for rear right clearance light	34000	3307
B 16	Positive for right parking indicator light	34000	3315
17	Free	-	-
18	Negative from the pneumatic suspension failure pressure switch	42200	6401
19	Negative from the longitudinal differential lock ON signalling switch	53521	6603
20	Negative from the 2 nd rear axle shoe wear signalling sensor	86003	6667
21	Free	-	-
22	Signal from the 3 rd axis wheel pad wear signalling sensor (left)	88011	6037
23	Negative from the transverse differential lock switch	53801	0041
24	Signal from the 3 rd axis wheel pad wear sensor (right)	88011	6035
25	Free	-	-
26	Positive for reverse gear light	34000	2226
27	Positive for rear left clearance light	34000	3306
28	Positive for rear left parking light	34000	3305
29	Free	-	-
30	Negative from the transverse differential lock signalling switch	53801	0040
31	Free	-	-
32	Free	-	-

D.D.M. / P.D.M. Figure 45 0 0 0 (0 С \bigcirc 0 0 0 0 0 \cap C 0 \bigcirc 10 0 00 0 0 0 49838 These centers manage all the functions appertaining to the two vehicle doors, namely:

- mirror heating
- mirror adjustment
- window lifter
- centralized lock.

They are located inside the vehicle door and removal is as follows:

- I. remove the door lining;
- 2. disassemble the loudspeaker tray by removing the three fastening screws;
- 3. take DDM off the tray by removing the two fastening screws
- 4. disconnect the three electric connection adapters.

Disassembling operations are the same for both doors.

P.D.M.

Pin	Pin Cable Function				
I	8830	Positive for main rear view mirror heating (only AS)			
2	8830	Positive for wide-angle rear view mirror heating (only AS)			
3	8830	Positive for manoeuvring door mirror heating (only AS)			
4	9965	Centralized lock motor control (CDL)			
5	9964	Centralized lock motor control (CDL)			
6	8863	Window lifter motor control (opening)			
7	8865	Window lifter motor control (closing)			
8	0000	Mass - Bridge with (J2-10) for module recognition			
9	-	Free			
10	-	Free			
11	0000	Negative for centralized door lock release push button			
12	0000	Negative for main rearview mirror heating			
13	0000	Negative for wide angle rearview mirror heating			
14	-	-			
15	2990	K line for diagnosis			
16	7990	Center power positive			
	CONNECTOR J2				
Pin Cable Function					
I	Ws/Bi	CAN H line (BCB)			
2	-	Free			
3	-	Free			
4	885 I	Wide angle rearview mirror control (return)			
5	8852	Wide angle rearview mirror control (vertical)			
6	8857	Main rearview mirror control (return)			
7	Gv/Ve	CAN L line (BCB)			
8	8853	Wide angle rearview mirror control (horizontal)			
9	-	Free			
10	0000	Mass - Bridge with (JI-8) for passenger side ECU recognition			
11	8859	Main rearview mirror control (horizontal)			
12	8858	Main rearview mirror control (vertical)			
	CONNECTOR J3				
Pin	Pin Cable Function				
I	0962	Negative from passenger side glass lifter push button			
2 ÷ 9	-	Free			
10	4442	Positive for passenger side glass lifter push button light			
H	0961	Negative from passenger side glass lower push button			
12	0960	Negative for passenger side glass control push button + lighting			
13 ÷ 20	-	Free			

D.D.M.

Pin				
1	8830	Positive for main rear view mirror beating (only AS)		
2	8830	Positive for wide angle rear view mirror beating (only AS)		
3	8830	Positive for front rear view mirror beating (only AS)		
4	9965	Centralized door lock motor control		
5	9964	Centralized door lock motor control		
5	9963	Window lifter motor control		
7	8865	Window lifter motor control		
, ,	0000	Control unit ground		
0	0000			
10	-	Free		
10	0000	Negative for Centralized door lock		
12	0000	Negative for main rearriew mirror heating		
12	0000	Negative for wide angle rearriew mirror heating		
14	0000	Free		
15	2991	K line for diagnosis		
16	7991	Positive for center power		
10	////			
Pin	Cable	Function		
	Ws/Bi	CAN H line (BCB)		
2	-	Free		
3	_	Free		
4	8851	Wide angle rearview mirror control (return)		
5	8852	Wide angle rearview mirror control (vertical)		
6	8806	Main rearriew mirror control (return)		
7 Gv/Ve CAN L line (BCB)				
8	8 8843 Wide angle rearview mirror control (horizontal)			
9	-	Free		
10	_	Free		
11	8809	Main rearview mirror control (horizontal)		
12	8808	Main rearview mirror control (vertical)		
		CONNECTOR J3		
Pin	Cable	Function		
1	0962	Negative from passenger side window lifter push button		
2	0966	Negative from passenger side window lower push button		
3	0967	Negative from operator side window lifter push button		
4	0957	Mirror heating control (only AS)		
5	0956	Mirror selection control (only AS)		
6	0953	Negative from right rearview mirror control push button (movement to the right)		
7	0954	Negative from left rearview mirror control push button (movement to the left)		
8	0951	Negative from right rearview mirror control push button (movement downwards)		
9	0952	Negative from left rearview mirror control push button (movement upwards)		
10	4442	Positive for passenger/operator side window push button lighting		
11	0961	Negative from passenger side window lower push button		
12	0960	Negative for passenger side window control push button + lighting		
13	0951	Negative for operator side window control push button + lighting		
14	0083	Mirror selection and heating ground (only AS)		
15	0950	Negative for rearview mirror control joystick push buttons		
16	0000	Negative for rearview mirror control joystick push button lighting		
17	0000	Mirror heating control light ground (only AS)		
18	-	Free		
19	4442	Positive for rearview mirror control joystick push button lighting		
20	4442	Positive for mirror heating control light (only AS)		
L				

B.M. (BED MODULE)	
Positioned at the cab rear	
Figure 46	
$9:18$ $LIGHT(WHITE)$ $MENU$ $ON OFF \uparrow \downarrow$ $ON OFF \cap \bigcirc$	
106	97
The B.C. identifies its presence but CANNOT be diagnosed.	
Its functions are as follows (variable configuration according to vehicle accessories):	
Time in hours and minutes	
Switching on/off of cab interior lights (selection of white/nightime lights).	
Opening/closing doors.	
Opening/closing electric windows.	
Opening/closing electric hatch.	
Lowering/raising sun blinds: Switching matio on/off	
Wake up function.	
Switching additional heater on/off.	
Temperature adjustment (only with additional heater switched on). (Automatic).	
Adjustment of heater on time (9 hours max.)	
NOTE Press the switch on the instrument panel before adjusting heater temperature.	

E.B.M. (EASY BED MODULE)

E.B.M. (Easy Bed Module) substitutes the previous (B.M.) roughly carrying out same functions. It has three keys and a display with icons for the various functions and the visualisation of the time. The B.M.E. connector is the same as the B.M. and the electrical connections are unchanged.

Pin - out

Pin	Description	Cable code colour
Ι	Direct Positive battery (+Bat)	7906
2	Ground	0000
3	-	-
4	CAN L line (BCB)	Green
5	CAN H line (BCB)	White
6		_

E.B.M. Functions

The functions which are carried out by E.B.M. vary according to the configuration of the accessories expected on the vehicle.

Figure 48

113412

I. Confirmation key - 2. Key for the selection of the desired function - 3. Clock

Function	Symbol	Availability
Indication of hour and minutes	××××	Always
Switching on / off of internal cabin lights (white lights)	入 文 天	Always
Switching on / off of internal cabin lights (red lights)	₩ 承	Only for vehicles with medium-high roofs
Opening/closure doors		Optional
Opening/closure electric windows		Optional
Opening/closure electric trapdoor	SZ S	Optional
Lowering /raising of sun blinds		Optional
Switching on / off radio Regulation of radio volume Radio tuning	P	Optional
Switching on / off radio Regulation volume Selection CD tracks	Ø	Optional
Alarm clock setting		Only if the alarm clock function is present on the Cluster
Alarm clock repetition (snooze) / switching off (stop)	۷ 🍂	Only if the alarm clock function is present on the Cluster
Switching on / off supplementary heater Regulation of temperature (if heater is switched on) Regulation of duration of heater functioning (max.9 hours)	<u>/</u> <u>/</u>	Optional

EDC (ECM) SYSTEMS

EDC 7 UC31 electronic control unit Figure 49 С Α Ω Ω ſ∩ (Ω) t \Box 5 Π Π 5 BOSCH В Π

A. Injector connector - B. Chassis connector - C. Sensor connector

W

W

-

102373

Cylinder 3 pump injector

Cylinder I pump injector

Cylinder 4 pump injector control

Cylinder 6 pump injector control

Cylinder 5 pump injector control

12

13

14

15

16

Cylinder 3 pump injector control

Cylinder I pump injector control

Cylinder 4 pump injector control

Cylinder 6 pump injector control

Cylinder 5 pump injector control

R

R

L

٧

Ζ

٧

В

L

н

Ζ

Chassis connector I "B"				
Figure 52	2 71 89 72 54 6 11			
	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	102376		
Pin	Description	Cable colour code		
Pin 1 2 3 4 5 6 7 8 9 10 11 12 13 14÷15 16 17÷25 26 27 28 29 30 31 32 33 34	- Control unit power supply positive (+30) Control unit power supply positive (+30) - Ground Ground - Control unit power supply positive (+30) Control unit power supply positive (+30) Ground Ground Ground Ground Ground enabling preheating activation Ground enabling preheating activation - Ground enabling engine fan activation - Signal from fuel air temperature sensor Signal from combustion air humidity sensor Ground for combustion air humidity sensor Ground from EDC system diagnosis request switch (wiring) - Ground from engine bay start-up button Engine rpm signal for bodybuilders (ST I 4B) Can - L line (ECB)	code - 7151 7151 - 0151 0151 0151 0151 0151 0151 0151 0094 0946 - 0014 - 5173 5174 0173 5163 - 8892 5587 Green		
35 36÷39 40	Can - H line (ECB) - Positive +15 (from BC2)	VVhite - 8015		
41÷46 47	- Ground from engine bay shut-down button	0151		
48÷53 54 55 56	- Positive for engine fan (speed I) solenoid valve Positive for engine brake solenoid (wiring) -	9166 9966 -		
57 58 59 <u>-</u> 67	Positive enabling engine fan activation Ground for engine brake solenoid (wiring)	5187 0043		
68 69÷74	Power for combustion air humidity and temperature sensors	8173		
75 76÷84	Positive enabling preheating activation	9164		
85 86÷88	Ground from EDC system diagnosis request switch (wiring)	5163		
89	K line (diagnostic connector pin 2)	2298		

VC	CM (VEHICLE CONTROL MODULE) ELECTRONIC CONTROL UNIT
Thi	s Electronic Control Unit is interfaced with the other on-board electronic systems through CAN lines:
	ECB - Engine Control Bus
	VDB - Vehicle Data Bus
	ICB - Instrument Cluster Bus
	FMB - Fuhrpark Managemant Bus
Am swi	iong the Electronic Control Unit input signals we find those of the accelerator pedal sensor, deviator for signalling (ABS) stop tch on clutch and switch for Economy function, which previously were connected to the EDC Electronic Control Unit.
The	e Immobilizer Elec. Cont. Unit is eliminated and the immobilizer antenna is connected to the Elec. Cont. Unit VCM.
The	e VCM operates also Cruise Control which before was connected onto Body Computer.
vc	CM main functions
	Driveability: accelerator pedal control and generation of torque requirements via CAN towards the engine according to the driveability maps, Required torque = f (Engine Speed, Accelerator Pedal Position).
	Arbitration of the requirements of Torque and Engine Speed: from external systems (Brakes, Transmission, Fitters, etc.) towards the engine during the phases of braking, changing gear, operations in PTO mode, VCM determines the requirement with the highest priority and transmits the corresponding requirement of Torque or Engine Speed via CAN to the engine.
	Speed limiter: (main, programmable and secondary) VCM determines the extent of the requirement of torque towards the engine ensuring that the active speed limits are not exceeded.
	Cruise Control: VCM adjusts the vehicle speed according to the set Cruise speed by modulating the requirement of torque transmitted via CAN to the engine (torque limitation or control), via the requirement of turning on the exhaust brake and Intarder, integrating the control functions of the conditions of engagement and release.
	Adaptive Cruise Control: VCM reads the data of the Radar relating to the distance of the preceding vehicle, adjusts the vehicle speed according to the set Cruise speed, keeping the distance selected by the driver, modulating the requirement of torque transmitted via CAN to the engine (torque limitation or control), via the requirement to turn on the exhaust brake and Intarder, integrating the functions of control of the conditions of engagement and release and in case of risk of collision activating the conventional brakes (interacting with the EBS system).
	Engine starting / stopping control logic and associated safety devices: requirement control from cab, engine bay, fitter connector.
	Power take off (PTO mode): management of the requirement to adjust engine speed via CAN in accordance with the conditions relating to the PTO 0, 1, 2, 3 (pre-programmed) modes with actuation by the engine.
	Low Idle control logic: dynamic High Idle control with requirement relating to the engine via CAN the VCM controls the requirement for engine speed adjustment via CAN with actuation by the engine.
	Exhaust Brake activation logic: control of driver requirements and arbitration of the requirements from external systems (Brakes, Transmission, Fitters, etc.), transmission of the value via CAN and actuation by the engine.
	Engine cooling fan activation logic (Baruffaldi): management of control logic, transmission of the activation request via CAN and actuation by the engine.
	ZF Simple H Gearbox: gearbox control with solenoid activation to pass from low range and high range in conditions of safety
	ALLISON Gearbox: standard CAN interface control on lever side, external requirements (Fitters) and for display logic on Instrument Panel.
	New EUROTRONIC lever (used for ALLISON too): driver requirement control for sending to EUROTRONIC gearbox and recovery in case of breakdown.
	Vehicle security system: Immobilizer
	Communication on CAN bus: Point-to-point communication from external bus for dedicated connection to apparatuses of Fleet Management in accordance with Bus - FMS. Interface for connection to Tester for diagnosis via CAN of the on-board systems.
	Others: Interface towards Instrument Panel on dedicated bus (ICB on Heavy Range) for information / controls to / from Driver. HW signal generation for fitter connector.

Electronic Control Unit location Figure 53 Ó 0 C XI **X**2 **X**3 명리 15°7 ╏╴╡╶┎╔╒╏ 2 5 8 1 14 17 2 5 8 11 14 3 6 9 12 15 3 6 9 2 5 8 _ ĮĽΪ

Pin - out

Connector XI

Pin	Description	Cable color
	Immobilizen zerial inzult zizzal	code
1	inmobiliser aeriai input signai	-
2	-	-
3	Immobiliser aerial output signal	-
4	Positive +30	7993
5	Positive +15 (from BC2)	8802
6	Ground	0000
7	Gearbox in neutral signal for body builders (STI4A)	8050
8	Positive for splitter gear activation solenoid (9 speed gearbox) (AT/AD)	9973
9	EDC system faulty signal for cluster	6150
10	Handbrake engaged signal for bodybuilders (ST14A)	6656
11	Positive for normal gear activation solenoid (9 speed gearbox) (AT/AD)	9974
12	Clutch status signal for bodybuilders (STI4B)	9963
13	Brake light signal for bodybuilders (STI4A)	1165
14	Signal indicating programmable speed threshold (PST) for bodybuilders (ST14B)	5542
15	Ground controlling starter motor relay	0008
16	Positive controlling starter motor relay	8888

108925

Pin - out

Connector X3

Pin	Description	Cable color
1		code White
2	CAN H line (VDB)	Green
2		Green
4	- Cround from coolant pressure indicator switch (22 bars)	- 0583
т 5	Ground from coolant pressure indicator switch (18 bars)	0582
6		-
7	Control cable for activating ACC	0179
, 8	Ground from switch indicating gearbox in neutral	8050
9		-
10	Ground from engine brake wiring switch (associated with accelerator pedal release)	0082
	Negative signal from control. Economy Power function switch	0166
12	Positive from ignition key terminal 50 (ignition control)	8888
13	Second speed limiter engagement signal from body builders (ST14B)	0172
14	Positive from brake indicator switch (brake pedal pressed - main brake lights)	8153
15	Positive from brake indicator switch (brake pedal released - secondary brake lights)	8158
16	-	_
17	Positive for accelerator pedal sensor	5158
18	-	-
19	Can H line (ECB)	White
20	Can L line (ECB)	Green
21	-	-
22	-	-
23	Ground from switch (N) for neutral position gear with automatic gearbox	0147
24	Ground from switch (D) for forward gears with automatic gearbox	0125
25	Ground from switch (D) for forward manoeuvre gears with automatic gearbox	0127
26	Engine stop signal (STI4A pin 2)	0151
27	Engine start-up signal from diagnostic interface/body builders (ST14A)	8892
28	Ground from start-up enablement switch	8892
29	Signal from cab release indicator switch	0096
30	Ground from Cruise Control cut-out switch (OFF)	8154
31	Ground from Cruise Control resume switch (RESUME)	8155
32	Ground from Cruise Control speed increase switch (SET+)	8156
22 24	Ground from cruise Control speed decrease switch (SET-)	0157
35	Signal from accelerator pedal sensor	5157
36		-
37	CAN H Line (FMB)	White
38	CAN L Line (FMB)	Green
39	-	White
40	-	Green
41	Ground from switch (R) for reverse gears with automatic gearbox	0126
42	Ground from switch (D) for reverse manoeuvre gears with automatic gearbox	0128
43	-	-
44	-	-
45	Ground for power take-off 3 request from body builders (ST14A)	0123
46	Ground for power take-off 2 request from body builders (ST14A)	0123
47	Ground for power take-off I request from body builders (ST14A)	0131
48	Ground from signalling switch connection of slow gears (9 gear changes)	0117
49	Cruise Control selection signal (INT / EXT) from body builders (ST14A)	0152
50	Signal from switch (SL) for speed limiter with automatic transmission	9968
51	Signal from switch on clutch for VCM (clutch cylinder 20% compressed)	0160
52	Ground from accelerator pedal idle switch	0158
53	Ground for accelerator pedal sensor	0157
54	VUM control unit K line (diagnostic connector pin 12)	2292

Pin - out

Connector XI		
Pin	Description	Cable colour code
I	PTO1 solenoid valve power supply	9131
2	Positive +30	7772
3	Signal for operators (72072B - pin 6)	6985
4	PTO2 solenoid valve power supply	9132
5	Ground	0000
6	PTO3 solenoid valve power supply	9132
7	Clutch solenoid valve signal (72072A - pin 4)	9995
8	Signal for operators (72072B - pin 7)	6986
9	Positive +30	7166

Connector X3

Pin	Description	Cable colour code
I	CAN - H line (VDB)	Sw/Bi
2	CAN - L line (VDB)	Gn/Ve
3	Free	-
4	Line K (diagnosis connector pin 6)	2996
5	PTOI request	0131
6	PTO2 request	0132
7	PTO3 request	0123
8	Signal of PTO1 engaged	6131
9	Signal of PTO2 engaged	6132
10	Signal of PTO3 engaged	6133
11	PTOI consensus signal	0391
12	PTO2 consensus signal	0392
3	Positive +15	8166
14	Free	-
15	Free	-
16	PTO3 consensus signal	0393
17	Signal from operators (72072A - pin 3)	0991
18	Signal from operators (72072A - pin T)	0992
19	Signal from operators (72072A - pin 2)	0993
20	Signal from operators (72072B - pin 3)	0994
21	Signal from operators (72072B - pin 4)	0995
22	Pin 24 jumper	8990
23	Pin 26 jumper	0990
24	Pin 22 jumper	8990
25	Free	-
26	Pin 23 jumper	0990

Conne	ctor X4	
Pin	Description	Cable colour code
I	Signal for operators (72072B - pin 8)	6987
2	Signal for operators (72072B - pin 9)	6988
3	Signal for operators (72072B - pin 10)	6989
4	Parking brake signal (72072A - pin T)	6981
5	Neutral gear signal (72072A - pin 2)	6983
6	Signal from operators (72072B - pin 5)	0996
7	Free	-
8	Free	-
9	Signal from operators (72072C / 72072D - pin 5)	0999
10	Free	-
11	Free	-
12	Line CAN - H (SB) - (trailer)	Ws/Bi
13	Line CAN - L (SB) - (trailer)	Gn/Ve
14	-	5981
15	-	5982
16	-	5991
17	Line CAN - H (SB)	Ws/Bi
18	Line CAN - H (SB)	Ws/Bi
19	Line CAN - L (SB)	Gn/Ve
20	Line CAN - L (SB)	Gn/Ve
21	Signal for operators (72072B - pin 11)	6990
22	Signal for operators (72072B - pin 12)	6991
23	Signal for operators (72072B - pin 13)	6992
24	Free	-
25	Free	-
26	Free	-
27	Free	-
28	Signal from operators (72072C / 72072D - pin 3)	0975
29	Signal from operators (72072B - pin 18)	5983
30	Free	-
31	Signal for operators (72072B - pin 14)	6993
32	Signal for operators (72072B - pin 15)	6994
33	Free	-
34	Free	-
35	Free	-
36	Free	-
37	Free	-
38	Signal from operators (72072B - pin 20)	5992
39	Free	-
40	Free	-

CENTRAL LOCKING WITH REMOTE CONTROL

The system consists of one or several (max. 8) transmitters and a receiver.

Transmitter

The transmitter has a special container of its own, equipped with an eyelet and ring.. The shock-proof transmitter container is also waterproof.

The transmitter sends the receiver a variable code (rolling code) by means of a radiofrequency signal at 433.92 MHz (EC Directive 95/56).

It is equipped with two buttons for door opening and closing, respectively.

By keeping the button pressed down for 50 msec, the variable code will be fully transmitted. If the button is actuated continuously, however, transmission will be interrupted after 5 seconds (\pm 10%).

The transmitter operating range is 10 m.

The battery guarantees a 2 years' service life. Following the replacement, the transmitter may be briefly actuated twice in order to restore synchronism with the receiver. This sequence is also permitted at any time other than battery replacement

Receiver

The receiver is housed inside a container with a white cover, which includes a transmitter programming button (easily accessible and protected against unintentional actuation), a programming check green LED, and a 8-way connector.

It is housed in instrument panel upper side, in front of passenger's seat.

The receiver antenna is housed inside the container, too.

The receiver receives and decodes the code that was sent by the transmitter, and can store up to eight codes. Doors locking and unlocking commands go from the transmitter to the receveir, which sends the signal to Body Computer central unit, which in turn via CAN line sends a message to Door Modules to activate the locks.

If the vehicle is in the key-ON condition (+15 is available), the receiver will perform no actuation through the remote control.

The receiver manages synchronization between the locks, and resumes correct alignment through a sequence of two or several transmitter or lock key drives.

Blinker control

Door lock locking and opening will be signalled by the lighting of the indicator lights. Therefore, the receiver need be interfaced with the Body Computer control unit that manages the above-mentioned lights.

The receiver features an output (to the ground) that is connected in parallel with the emergency light switch. The latter consists of an unstable button that actuates and deactivates the blinking sequence (blinker signal).

Description of blinker controls:

- □ TI = 120 msec (Start)
- T2 = 700 msec (Delay Lock)
- T2 = 1550 msec (Delay Unlock)
- \Box T3 = 120 msec (Stop)

Control unit pin-out (receiver)

Pin	Function	code
I	Blinker control	3
2	Engine power supply for centralised closure (door closure) - (without DDM, PDM) (only AT/AD)	9965
2	Battery positive	7772
4	Ground	0000
5	Central locking control (door closing)	0064
6	Central locking control (door opening)	0065
7	+15 power supply	8871
8	Engine power supply for centralised closure (door opening) - (without DDM, PDM) (only AT/AD)	9964

Programming

The programming status makes it possible to get the receiver to recognize the transmitters enabled to control the respective functions.

Programming is accessed through the rest state when the +15 signal is not available.

The receiver may be controlled by a transmitter with a universal code as long as at least one transmitter is not programmed. After a variable code (other than the universal code) has been programmed, the latter will not be recognized any longer. Transmitters are programmed in the FIFO mode.

Two transmitter programming modes are available:

- simplified programming: it allows you to program the transmitters quickly. It can be actuated until 128 actuations are performed after the first programming, or until it is disabled.
- Protected programming: it guarantees the customer against the risk of other transmitters being programmed without the knowledge of the customer themselves. It involves using a password (shown on the tag enclosed with the transmitter) that can be obtained from the transmitter code.

Simplified programming

The first code (and the subsequent ones as well) are programmed as follows:

- press the button on the receiver: the LED will light up and blink;
- the operator presses, while keeping the button on the receiver pressed down, any of the key of the transmitter, which sends out the code;
- the receiver stores, after detecting three subsequent transmission instances (with the current checksum), the code into the memory;
- the receiver LED will, at the very time when it recognizes the code, light up steadily, thus signalling that the code has been received: now the operator may release the transmitter button to end the programming.

Simplified programming disable

Simplified programming may be disabled by entering the password as follows:

- press the small button on the receiver: the LED will light up and blink;
- release the small button: the LED will blink once;
- enter, by means of the small button, a 4-digit code (password): each digit shall be included between 0 and 9 (code written on the label delivered together with the transmitter). An optical feedback will be generated on the LED every time the small button is pressed;
- after each digit has been entered, wait for the LED to blink again to request the next digit, up to the fourth digit;
- the procedure will be over after the last digit is entered.

Protected programming

Every time a new transmitter is to be recognized after firstly entering the password, you will need to enter the password of any of the transmitters previously stored into the memory. Correct recognizion of the password will be signalled by the LED blinking after the password has been entered (if the password is not recognized, the LED will remain ON for 10 seconds). When the LED is blinking, keep the receiver button pressed down, then transmit with the new remote control to be stored into the memory, by following the simplified programming instructions.

Stralis

Circuit charts

		Page
CHART I:	DIRECT POSITIVE TO BATTERY	69
CHART 2:	POSITIVE AFTER TGC (+30)_1 (AS)	70
CHART 3:	POSITIVE AFTER TGC (+30)_1 (AT/AD)	71
CHART 4:	POSITIVE AFTER TGC (+30)_2 (AS)	72
CHART 5:	POSITIVE AFTER TGC (+30)_2 (AT/AD)	73
CHART 6:	POSITIVE AFTER TGC (+30)_3 (AS)	74
CHART 7:	POSITIVE AFTER TGC (+30)_3 (AT/AD)	75
CHART 8:	POWER SUPPLY (+15)_1 (AS)	76
CHART 9:	POWER SUPPLY (+15)_1 (AT/AD)	77
CHART 10:	POWER SUPPLY (+15)_2 (AS)	78
CHART II:	POWER SUPPLY (+15)_2 (AT/AD)	79
CHART 12:	BODY COMPUTER (BC2)_(J7)	80
CHART 13:	BODY COMPUTER (BC2)_(J6) (AS)	81
CHART 14:	BODY COMPUTER (BC2)_(J6) (AT/AD)	82
CHART 15:	BODY COMPUTER (BC2)_(J4-J5) (AS)	83
CHART 16:	BODY COMPUTER (BC2)_(J4-J5) (AT/AD)	84
CHART 17:	BODY COMPUTER (BC2)_(J2-J3) (AS)	85
CHART 18:	BODY COMPUTER (BC2)_(J2-J3) (AT/AD)	86
CHART 19:	IC CENTRAL UNIT (AS)	87
CHART 20:	IC CENTRAL UNIT (AT/AD)	88
CHART 21:	TACHOGRAPH / DIAGNOSIS SOCKET	89
CHART 22:	STEERING WHEEL INTERFACE (SW	I) 90
CHART 23:	DDM-BM CENTRAL UNIT (AS)	91
CHART 24:	DDM-BM CENTRAL UNIT (AT/AD)	92
CHART 25:	PDM CENTRAL UNIT (AS)	93
CHART 26:	PDM CENTRAL UNIT (AT/AD)	94
CHART 27:	THERMAL MIRRORS / CENTRALISE CLOSURE / WINDOW WINDERS (WITHOUT DDM-PDM) (AT/AD)) 95

		Page
CHART 28:	ELECTRONIC CONTROL UNIT	96
CHART 29:	ELECTRONIC CONTROL UNIT VCM_01 (AT/AD)	97
CHART 30:	ELECTRONIC CONTROL UNIT VCM_02 (AS)	98
CHART 31:	ELECTRONIC CONTROL UNIT VCM_02 (AT/AD)	99
CHART 32:	EDC (CONNECTOR B)	100
CHART 33:	EDC (CONNECTOR A/C - F2B)	101
CHART 34:	EDC (CONNECTOR A/C - F3B)	102
CHART 35:	CENTRAL UNIT UDS (DENOX2)	103
CHART 36:	CENTRAL UNIT FFC (JI)	104
CHART 37:	CENTRAL UNIT FFC (J2)	105
CHART 38:	CENTRAL UNIT RFC (JI)	106
CHART 39:	CENTRAL UNIT RFC (J2)	107
CHART 40:	LINE CAN-IDB / FMB / TELEMATICS CENTRAL UNIT / NAVIGATOR	108
CHART 41:	CAN-SB (EBS2-ABS) LINE	109
CHART 42:	CAN-BCB LINE	110
CHART 43:	CAN-VDB LINE	
CHART 44:	CAN-ECB LINE	112
CHART 45:	ECAS 4X2 P (TRACTOR)	113
CHART 46:	ECAS 4X2 FP (TRACTOR)	114
CHART 47:	ECAS 4X2 P/FP (LORRY)	115
CHART 48:	ECAS 6X4 P	116
CHART 49:	ECAS 6X2 P/FP/C (3 RD AXLE LIFTABLE)	117
CHART 50:	ECAS 6X2 P/FP (3 RD AXLE NOT LIFTABLE)	118
CHART 51:	ECAS 6X2 C (3 RD AXLE NOT LIFTABLE)	119

Page

CHART 52:	ABS	120
CHART 53:	EBS2	121
CHART 54:	ENGINE COOLING/VENTILATION (AS)	122
CHART 55:	VENTILATION (AT/AD)	123
CHART 56:	ENGINE COOLING (AT/AD) .	124
CHART 57:	MANUALLY CONTROLLED CLIMAT	Е 125
CHART 58: CONTROL S	MANUALLY CONTROLLED CLIMAT	Е 126
CHART 59:	MANUALLY CONTROLLED CLIMAT CONTROL SYSTEM (AT/AD CAR TRANSPORTER)	Е 127
CHART 60:	AUTOMATICALLY CONTROLLED CLIMATE CONTROL SYSTEM (AS)	128
CHART 61:	MANUAL DRIVE ADDITIONAL WATER HEATER	129
CHART 62:	AUTOMATICALLY CONTROLLED SUPPLEMENTARY WATER HEATER	130
CHART 63:	MANUAL/AUTOMATIC SUPPLEMENTARY WATER HEATER	3
CHART 64:	EUROTRONIC II	132
CHART 65:	DECELERATOR ZF	133
CHART 66:	CENTRAL UNIT EM (PTO)	134
CHART 67:	RADIO RECEIVER	135
CHART 68:	MECCHANICAL IGC	136
CHART 69:	ADR (OPT. 0129)	137
CHART 70:	ADR (2001)	138
CHART 71:	ALLISON GEARBOX (AT/AD)	139

Base - March 2007

Chart I: Direct positive to battery

Print 603.93.746








Chart 5: Positive after TGC (+30)_2 (AT/AD)

113448



```
113449
```



Chart 7: Positive after TGC (+30)_3 (AT/AD)



Print 603.93.746



Chart 9: Power supply (+15)_1 (AT/AD)





Chart II: Power supply (+15)_2 (AT/AD)



113455







Print 603.93.746

113457



Chart 15: Body Computer (BC2)_(J4-J5) (AS)

||3458











ST06B -0000-40011 A5 A6 -0000-2667 500 -0000--<u>6</u> ¥ A44 A8 ST06B D.T.C.O. B -0100 ST36 9 ST36 8 ST06B ST06B FA. 88 89*LL* ST06B 5 5106B 7 50005 R gg B BC2 +070540 8138-<mark>A</mark>16 8 믠 A10 86116 ST06A S145 5664-**--**5 A14 28 14 72021 **766** 070 2240 ÷. ST06A 6 IDB JA13 B SI45 0799 ST37 ·906/___028 - 5541-----م 090 +BATT 906*L* STO7B 9241-1759 B18 50.3 ÷ 788 1788 86015 86015 A18 141 ST25 8 ۲ 0919 B19 -0000-±2000. ⇒⊽≍ -0519-86132 VCM x3 8 \$



113462

Ē

Chart 20: IC central unit (AT/AD) ______ ₩2 ₩2 3T06B 40011 **%** 0000 ST06B Υ 000 6 ¥ Z66Z-A8 ST06B D.T.C.O. /DB ¥4 R BIGC SI36 9 SI36 8 SI06B STO6B A1 -29// ST06B 5T06B 5T06B 7 50005 B ADB M ¥ 07540 BC2 A16 8138 8 GB A10 86116 ST06A ST45 A14 5994 - Fo -<₹ 7667 28 14 14 ₽ ₽240 ₽ ¥ ? ST06A 圄 픱 A13 -0799 S145 -9062 ST37 10901 وي 1499 <mark>م</mark> +BATT 906Z ST07B 924 J 450 B18 +15 0003 <u>-</u>1788 1788 ST25 A18 8 36015 -l†99_ ۲ 0519 B10 2099-B19 0000 ي ي ق ق 0000-53538 B32 7 9m 0000 -0519-**___**5150-86132 VCM 8 \$ ц,





||3464





Chart 23: DDM-BM central unit (AS)

Print 603.93.746













Chart 27: Thermal mirrors / Centralised closure / Window winders (without DDM-PDM)



||347|

Base - March 2007





















Print 603.93.746





||3478



Print 603.93.746





Chart 37:

Central unit FFC (J2)




Chart 39: Central unit RFC (J2)









||3485

E











Chart 48: ECAS 6X4 P 42381/B Д -0070--2048 -2443--2443 42*3*81/A -00+0 -2048 ²⁴00≠6 -0076 e403 <u>5</u> e403 5 8888 6 -9425-И JHĊHC 78243 -9454 m^e 32.0405 C ₽Z₽6⁵ 25555 2049 \$\$|0 -9452щ 6453 \Box° S 0000 ECAS \downarrow 13 85065 -0188 ECAS щ - 2451 - ²⁰ -1240 ST26A -00+0 2021 |5569 -75794 с с i <mark>∽00†0-</mark> 2455~ +15 10 2422 0905 -0188-10046, -0188 -00**†**0[≤] -3I -0447. 077/ SIZ6A SIZ6A VDB R B B C B B C 12 -0000-5 -0000-86023 -0000 # # # # # # BC2 +5 R.F.C. (J2) 🕂 42200 079 **P** m6 -0000-BCB R 86118 F.F.C. (J2) 🕂 BS H 86117 STOBA 6 ST63 В ш^{*} 🔻 STOBA BCB BCB 86116 ST63 B4 12 <u>س</u>" Ē



Chart 49: ECAS 6X2 P/FP/C (3rd axle liftable)





Chart 51: ECAS 6X2 C (3rd axle not liftable)









Chart 55: Ventilation (AT/AD)

Chart 56: Engine cooling (AT/AD)





Chart 57: Manually controlled climate control system (AS)

















Chart 62: Automatically controlled supplementary water heater



Chart 63: Manual/automatic supplementary water heater







Chart 66: Central unit EM (PTO)







Stralis





113512



||35|3





113514

Block diagram	
	Page
CHART I: A. ENGINE START-UP FROM CAB AND FRONT	143
GROUND B. LOADS ACTIVATED WITH ENGINE ON C. BATTERY RECHARGING WARNING LIGHT	
CHART 2: A. POWER TO BODYBUILDERS CONNECTOR	44
B. IMMOBILISER BLINK CODES FOR EMERGENC START-UP AND CONTROL OF BOILER	Y
C. FOUR WHEEL DRIVE ENGAGEMENT WARNI	NG
CHART 3: A. CRUISE CONTROL	145
B. ACCELERATOR PEDAL C. PRE-POST HEATING ACTIVATION WARNING LIGHT	G
CHART 4: A. ENGINE BRAKE (WITH EBS AND INTARDER)	146
 B. ENGINE BRAKE (WITH EBS) C. ENGINE BRAKE (WITH ABS AND INTARDER) D. ENGINE BRAKE (WITH ABS WITHOUT 	
INTARDER) E. ENGINE BRAKE ENGAGEMENT WARNING LI	GHT
CHART 5: A. BATTERY VOLTAGE GAUGE B. ENGINE RPM GAUGE C. COOLANT TEMPERATURE GAUGE	147
D. FUEL LEVEL GAUGE	
CHART 6: A. LOW ENGINE OIL PRESSURE WARNING LIGI B. LOW ENGINE OIL LEVEL WARNING LIGHTS C. LOW WINDSCREEN WASHER FLUID WARN	48 HTS ING
D. LOW POWER STEERING FLUID WARNING LIGHTS	
E. LOW ENGINE COOLANT LEVEL WARNING LIGHTS	
CHART 7: A. BRAKE WEAR WARNING LIGHTS	149
 B. BRAKE WEAR LEVEL INDICATOR C. CRAWLER GEARS ENGAGED WARNING LIG D. OIL FILTER BLOCKED WARNING LIGHT E. AIR CLEANER BLOCKED WARNING LIGHT 	ΗT
CHART 8: A. HANDBRAKE ENGAGED WARNING LIGHT B. ON-ROAD VEHICLE TRANSVERSAL	150
DIFFERENTIAL LOCK WARNING LIGHTS D. LONGITUDINAL DIFFERENTIAL LOCK WARN LIGHT	NING
E. WATER IN FUEL FILTER WARNING MESSAG	E
CHART 9: A. EXTERIOR LIGHTS	151

i age	F	age
52 -S)	CHART 22: A. AIR SUSPENSION B. ABS FUNCTION WARNING LIGHT	164
153 6) S)	CHART 23: A. EBS FAULTS B. HEATED WINDSCREEN D. ENGINE PTO	165
154	CHART 24: A. RETARDER ENGAGEMENT WARNING LIGHT B. FUEL FILTER BLOCKED INFORMATION DISPLA D. CAB TILT	166 4Y
	CHART 25: A. BRAKE PRESSURE GAUGE B. AXLE LOAD INFORMATION DISPLAY D. EXTERIOR TEMPERATURE DISPLAY	167
156	CHART 26: A. ODOMETER/TRIP COUNTER B. GEARBOX C. SECOND SPEED LIMITERS D. CLUTCH CONTROL	168
158 159 AMP	CHART 27: A. ENGINE OIL TEMPERATURE B. ROTARY LIGHTS C. SUN BLINDS	169
160	 CHART 28: A. SEAT BELT WARNING LIGHT B. GEAR SELECTOR ON STEERING WHEEL INTERFACE C. ADDITIONAL EUROTRONIC CONTROL BUTTONS D. SPOTLIGHTS (ONLY WITH HIGH TOP) 	170
	CHART 29: A. H GEARLEVER	7
162	CHART 30: A. BC CAN LINES B. VCM CAN LINES	172
163	B. VELLEAR LINES	
	152 153 153 154 156 157 158 159 AMP 160 161 162 163	152 CHART 22: A. AIR SUSPENSION B. ABS FUNCTION WARNING LIGHT (153) (153) (154) CHART 23: A. EBS FAULTS B. HEATED WINDSCREEN D. ENGINE PTO (154) CHART 24: A. RETARDER ENGAGEMENT WARNING LIGHT B. ALL FLITER BLOCKED INFORMATION DISPLAY D. CAB TILT CHART 25: A. BRAKE PRESSURE GAUGE B. AXLE LOAD INFORMATION DISPLAY D. EXTERIOR TEMPERATURE DISPLAY D. EXTERIOR TEMPERATURE DISPLAY D. EXTERIOR TEMPERATURE B. GEARBOX C. SECOND SPEED LIMITERS D. CLUTCH CONTROL 158 CHART 27: A. SCAT BELT WARNING LIGHT B. GEAR SELECTOR ON STEERING WHEEL INTERFACE C. ADDITIONAL EUROTRONIC CONTROL B. SPOTLIGHTS (ONLY WITH HIGH TOP) CHART 29: A. H GEARLEVER 162 CHART 30: A. BC CAN LINES B. VCM CAN LINES




||35|6

Chart 3: A. Cruise control



Print 603.93.746









||352|









A. Exterior lights (Low beam headlights) B. Exterior lights (high beams and additional beams) C. Exterior lights (fog light)



Stralis



Chart 12:









Chart 14: A. Interior lights with low or medium high roof





Chart 16: A. Wake up signals for TGC





||353|







Chart 20:

A. Mirror movement and heating B. Electric windows







A. Air suspension B. ABS function warning light







A. Retarder engagement warning lightB. Fuel filter blocked information displayD. Cab tilt









||354|





Chart 30:

A. BC CAN lines B. VCM CAN lines

