

# Service Manual Cars

Section 3(39)  
Wiring Diagrams  
850 1997

TP 3917201

**VOLVO**

# Cars with SRS (Air bag)/SIPS bag

## Warning

Cars equipped with a Supplemental Restraint System (SRS)/SIPS bag must be treated extra carefully when repairs are being made. This is to help prevent:

1. Injuries when carrying out a repair. 2. Damage or malfunction of the SRS/SIPS bag system. Repair to either the SRS/SIPS bag itself or a related system or component must be carried out by an authorized Volvo workshop. Refer to the appropriate SRS and SIPS bag service manual for complete system information.

## Is the car equipped with SRS?

Cars with SRS are most easily recognized by the SRS letters on the steering wheel pad. If the car is also equipped with an air bag on the passenger side, the letters 'SRS' will be embossed on the instrument panel above the glove compartment. On models from 1993 on, cars with SRS will also be equipped with pyrotechnical seat belt tensioners in the B-posts.

The SIPS bags are only installed in cars equipped with SRS systems, 1995-. Cars with SIPS bags can be recognized by the identifying labels on the windshield and on seat storage tray.

## Dashboard or around steering column

Take care to avoid the SRS wiring being pinched, frayed or pierced by screws when working on the firewall, knee bolster, ignition switch, steering column casings, glove compartment, instrument panel, door sills and B-posts.

## Center console

The SRS collision sensor is located between the handbrake and gear lever (selector) in the center console. Never install accessories on or near the sensor. The collision sensor connector on 1992 models must **never** be disconnected.

## Repairs to steering gear and column

When carrying out repairs to the steering wheel, steering gear or column always follow the repair procedures given in the appropriate SRS service manual. The contact reel in the steering column will be damaged if the steering wheel is turned more than three turns in either direction.

## Seats

The SIPS bag sensor is located in the front section of the seat storage tray. The SIPS-bag can be activated by a blow or pressure on the tray or if an object is caught between the tray and the door when the door is closed. Refer to the SIPS bag Service manual when carrying out work on the front seats.

## Test terminal

-1995: Diagnostic unit B in the engine compartment is used for fault-tracing purposes.

1996-: Data Link Connector socket in passenger compartment.

## Modifications to March 1996 included

Modifications introduced after the above date are not covered in this manual. See Service Bulletins as applicable.

Volvos are sold in versions adapted for different markets. These adaptations depend on many factors including legal, taxation and market requirements. This manual may therefore show illustrations and text which do not apply to cars in your country.

Volvo owners planning to export their car(s) to another country should investigate the applicable safety and exhaust emission requirements. In some cases it may be impossible to comply with these requirements.



This book deals with the electronic systems and their functions which are specific for 1997 cars or which differ from the corresponding electrical functions in the 1996 model year cars.

Service Manual Section. 3 (39) Wiring diagrams 850 1996 can be referred to when

## Contents

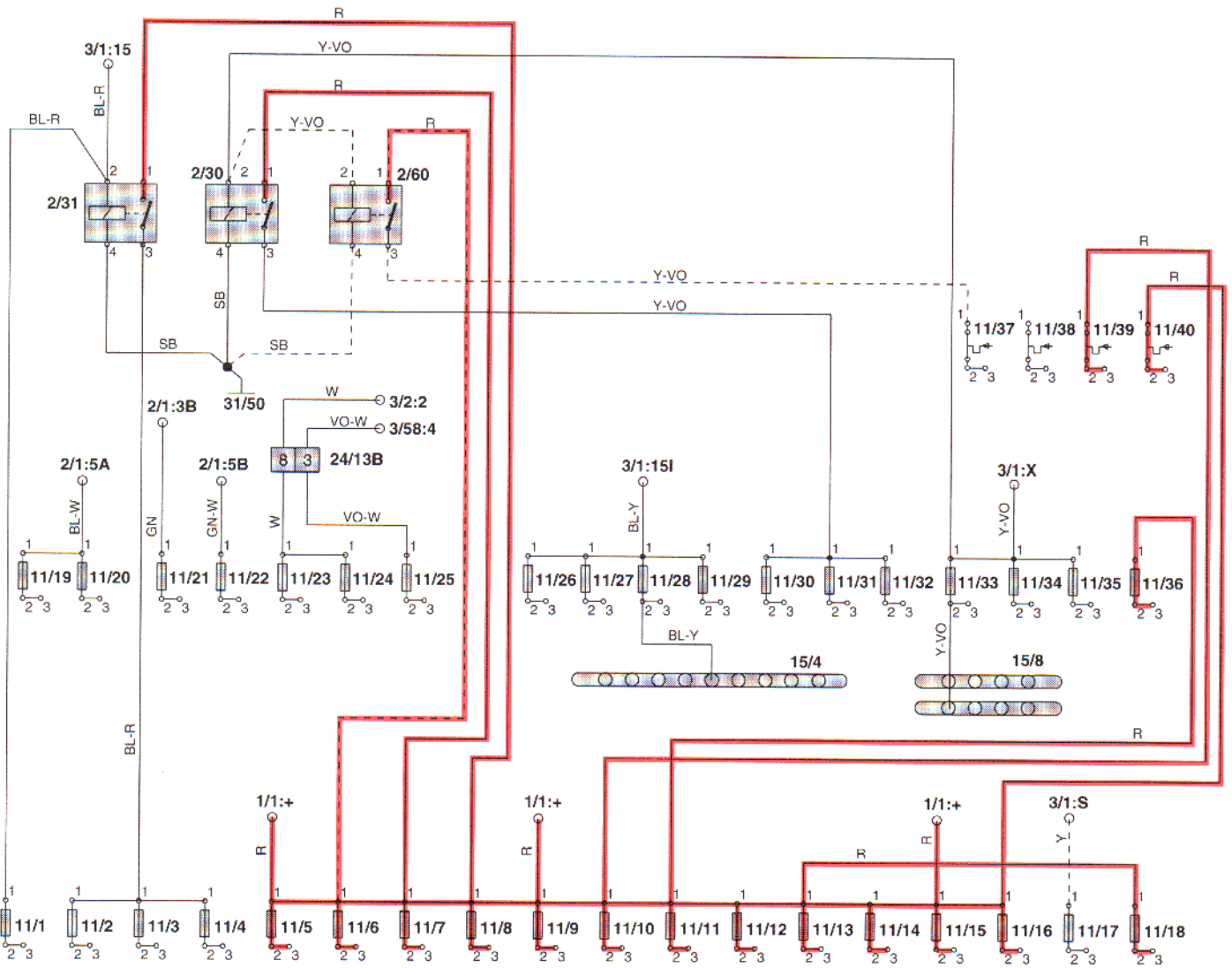
Fuses .....	2	<b>Group 37</b>	
Fuses, Diesel .....	4	On-board diagnostic system (OBD system) .....	36
Relays in positions 210-211 .....	8	On-board diagnostic system (OBD system), Diesel .....	37
Engine management system relays, Diesel .....	9	<b>Group 38</b>	
Electrical distribution .....	10	Seat belt reminder .....	38
Electrical distribution, Diesel .....	11	Seat belt and key warning, USA, Canada, Korea .....	39
Ground point 31/71 .....	12	Seat belt and key warning, Australia .....	40
Diesel ground point 31/32 .....	12	Combined instrument panel VDO .....	41
		Combined instrument panel VDO, Diesel .....	42
<b>Group 23/28</b>		<b>Group 39</b>	
Multipoint fuel injection (MFI) system, LH-jetronic 3.2 & EZ 129 K .....	13	Radio with 4x50 W extra amplifier, 4-door .....	43
Multipoint fuel injection (MFI) system, Fenix 5.2 .....	14	Radio with 4x50 W extra amplifier, 5-door .....	44
Sequential fuel injection (SFI) system, Motronic 4.3 (B 5204 T, B 5234 T) .....	16	<b>Group 43</b>	
Sequential fuel injection (SFI) system, Motronic 4.3 (B 5254 S) .....	18	AW 50-42 electronically controlled automatic transmission (Fenix 5.2, Motronic 4.3/4.4) .....	45
Sequential fuel injection (SFI) system, Motronic 4.4 (B 5254 S) .....	20	AW 50-42 electronically controlled automatic transmission (MSA 15.7) .....	46
Sequential fuel injection (SFI) system, Motronic 4.4 (B 5254 T) .....	22	<b>Group 59</b>	
Engine management system MSA 15.7 .....	24	ABS Brake system and TRACS .....	47
		ABS Brake system and TRACS, Diesel .....	48
<b>Group 26</b>		<b>Group 83</b>	
Engine coolant fan (FC), Diesel .....	26	Central locking, 4-door .....	49
		Central locking, 5-door .....	50
<b>Group 27</b>		2-stage central locking, 4-door .....	51
Cruise control, Diesel .....	27	2-stage central locking, 5-door .....	52
		Central locking with deadlock, 4-door .....	53
<b>Group 32/33</b>		Central locking with deadlock, 5-door .....	54
Power supply and starting system, Diesel .....	26	Remote control central locking .....	55
		List of components (foldout) .....	at end of manual
<b>Group 35</b>		Feedback .....	on last page of this manual
High and low beams .....	29		
High and low beam, Diesel .....	30		
Courtesy light, (4-door) .....	31		
Courtesy light, (5-door) .....	32		
<b>Group 36</b>			
Guard Alarm II .....	33		
Electronic Immobilizer .....	34		
Electronic Immobilizer, Diesel .....	35		

Order no. TP 3917031 (UK)

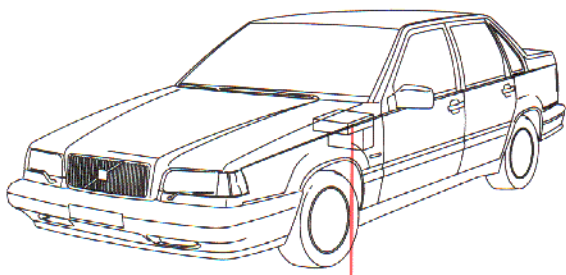
Order no. TP 3917201 (USA/CDN)

We reserve the right to make alterations without prior notification

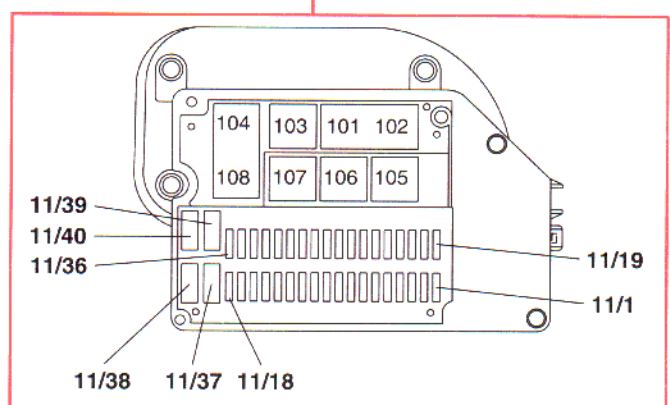
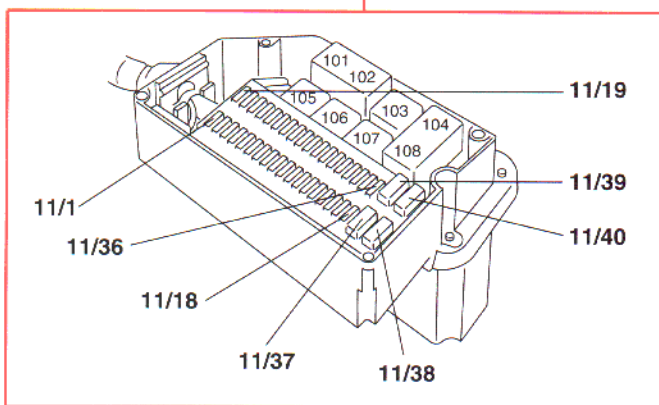
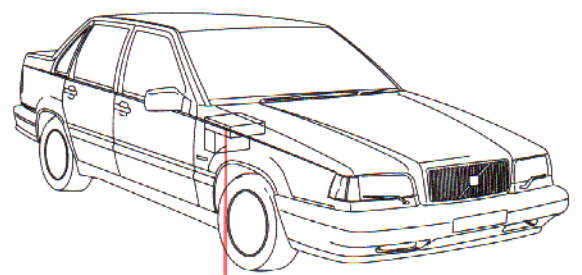
# Fuses



LHD

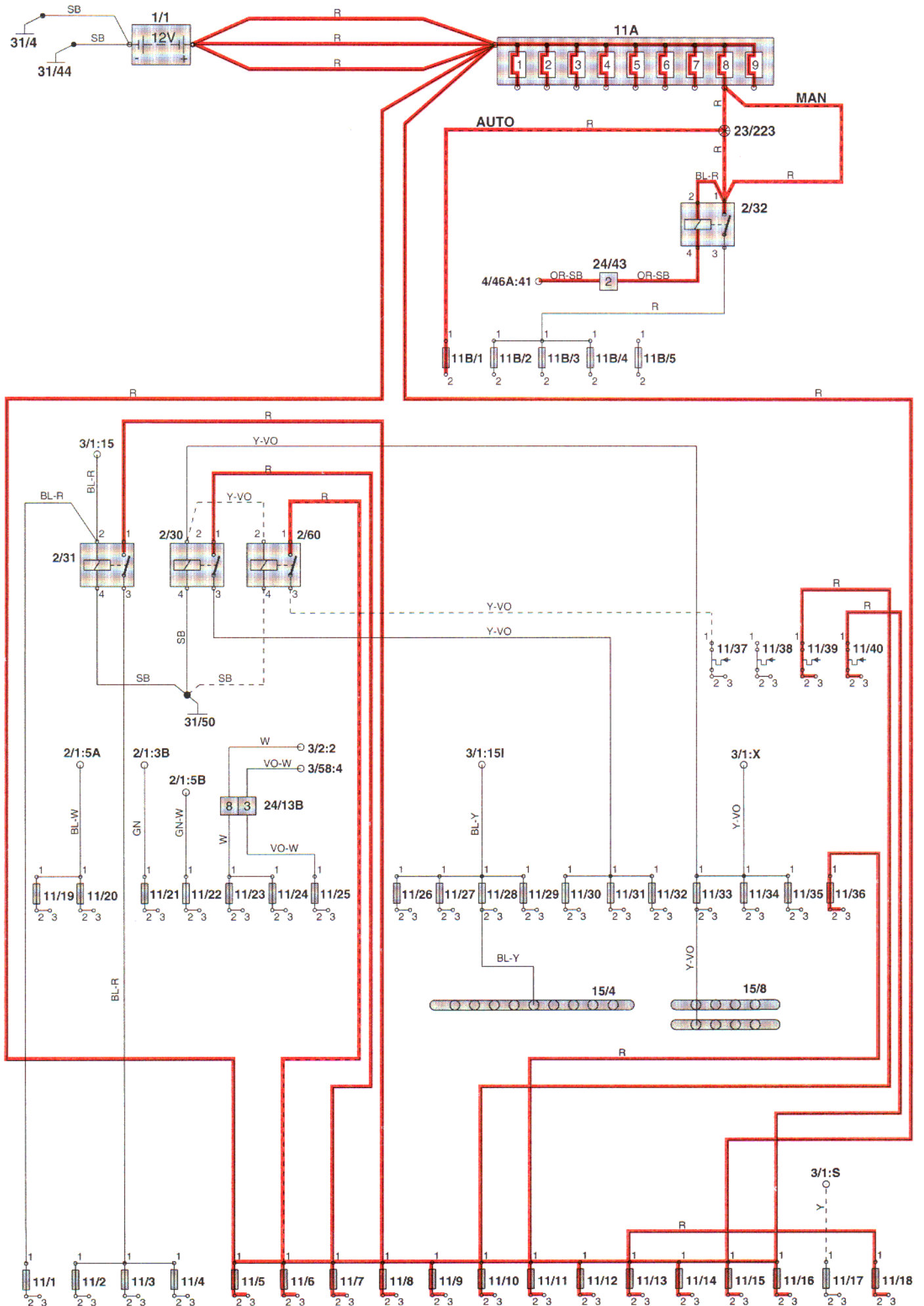


RHD





# Fuses, Diesel

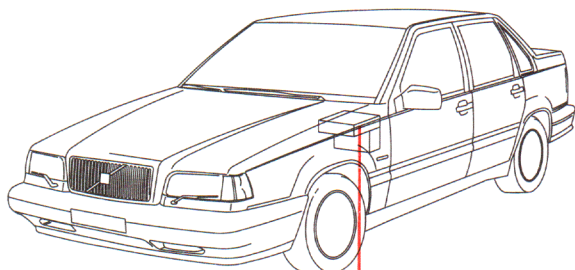


# Relays in positions 210-211

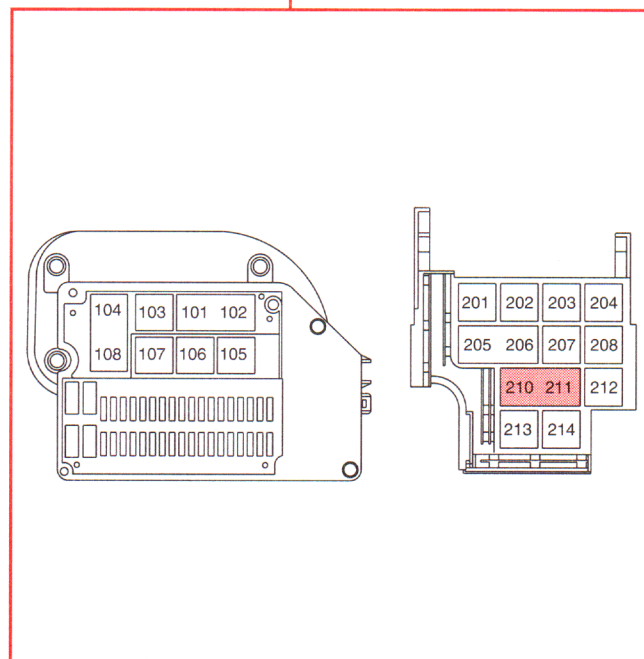
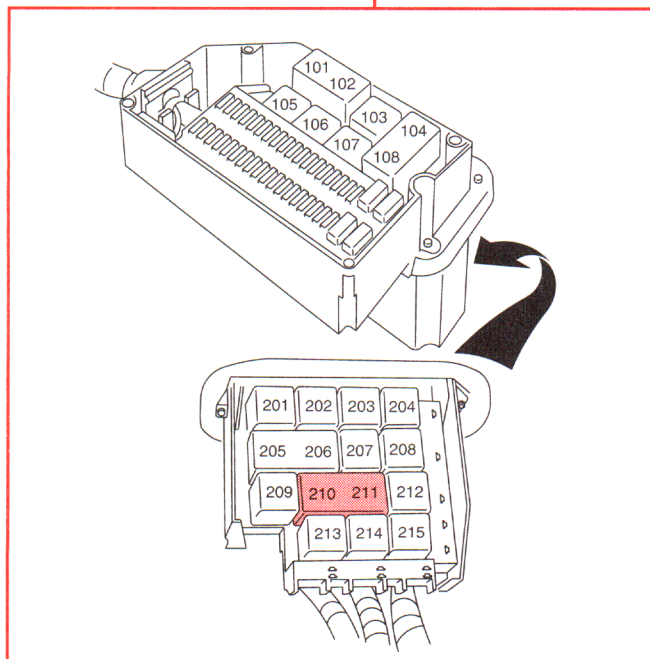
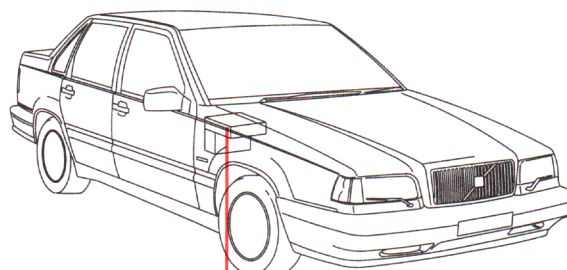
**210-211 Alarm relay (2/28)  
or  
Remote control central locking /indication LED  
electronic immobilizer (2/110)**

**If the car is not equipped with relays 2/28 or 2/110,  
there is a bridge at position 210. Position 211 is then vacant.**

**LHD**



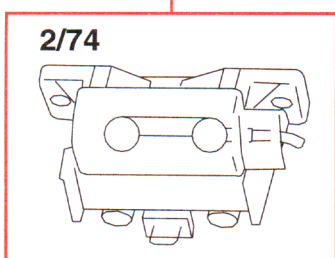
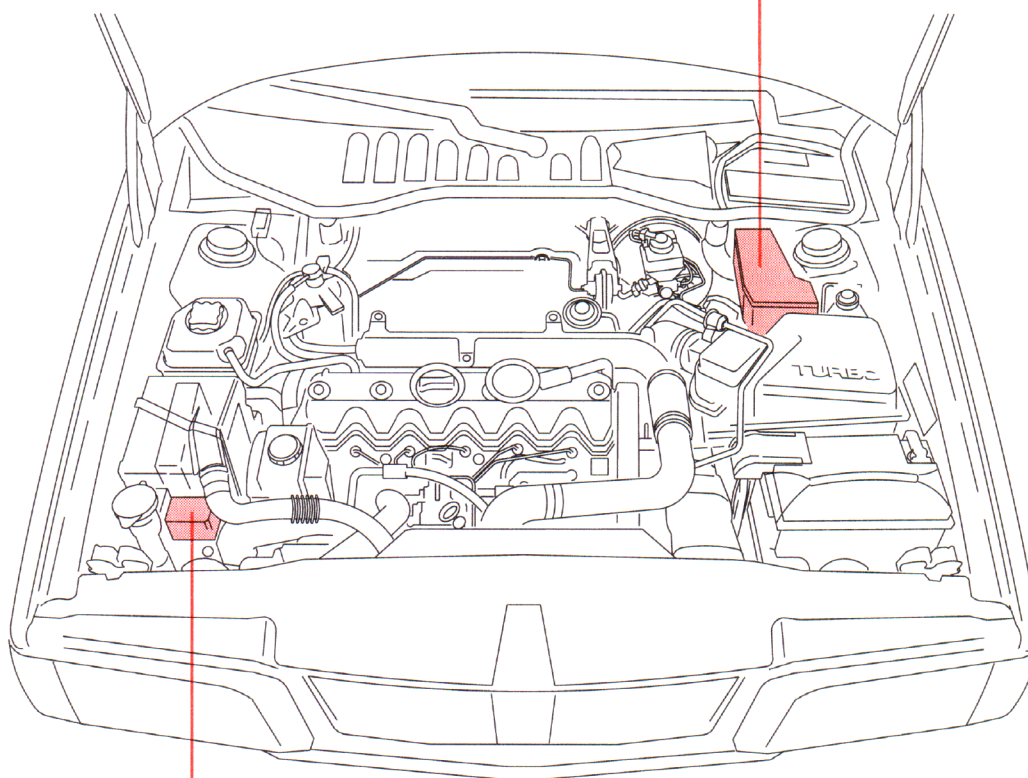
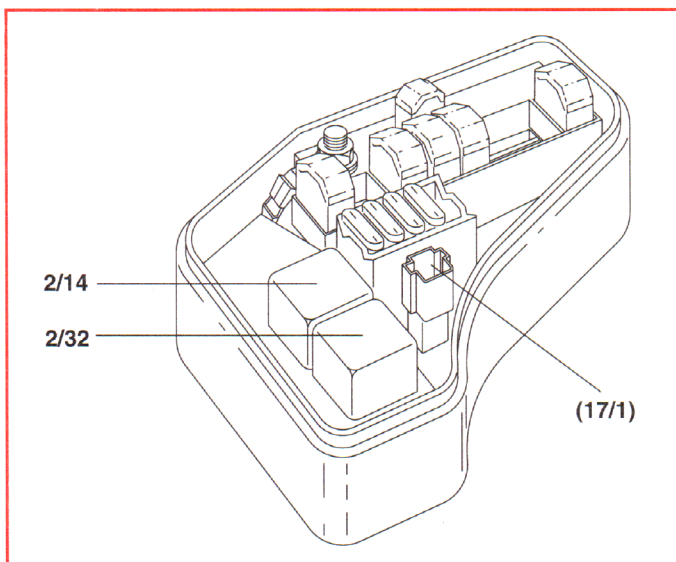
**RHD**



# Engine management system relays, Diesel

## In relay/fusebox engine compartment

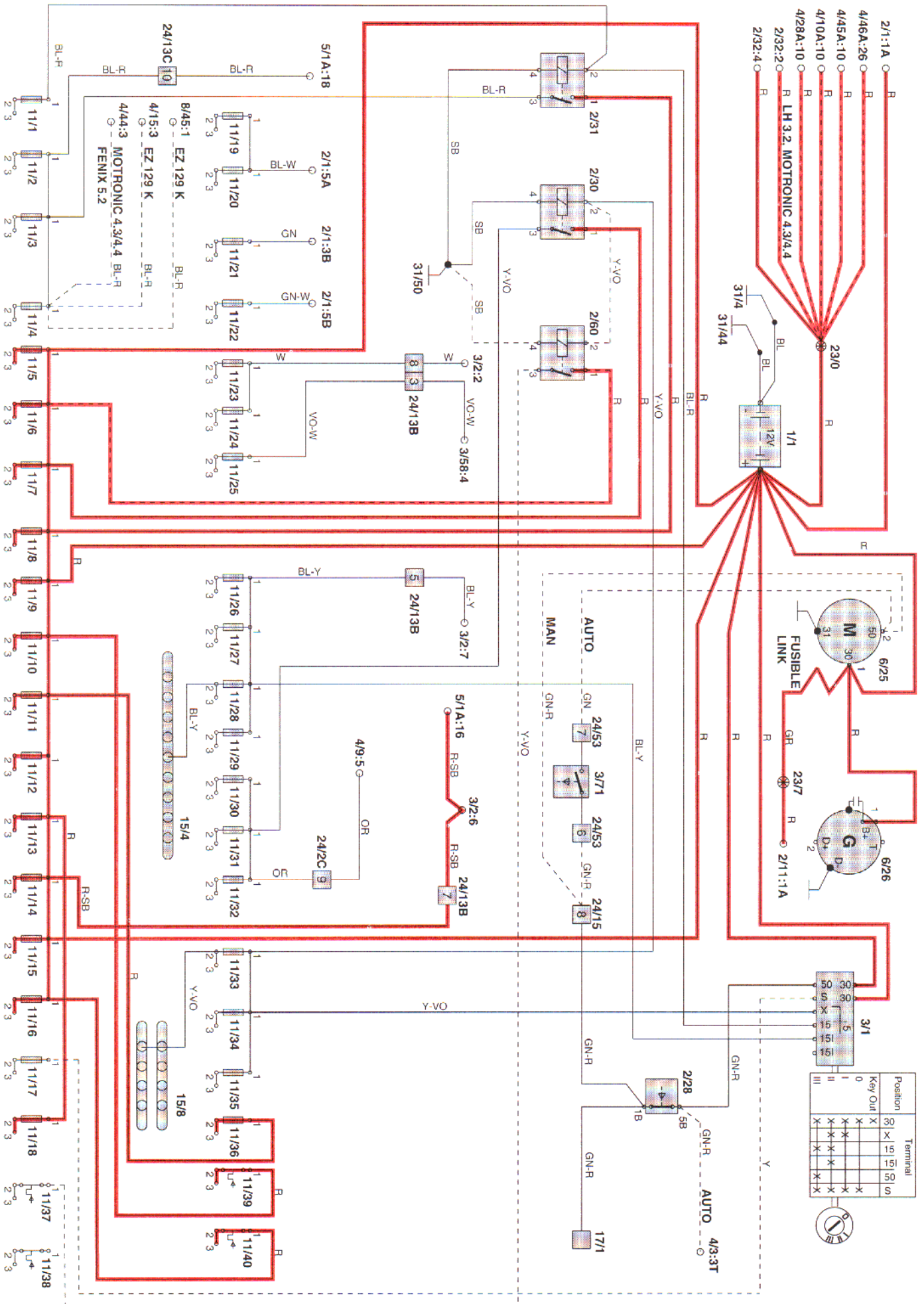
- 2/14 Glow plug relay
- 2/32 Fuel system main relay



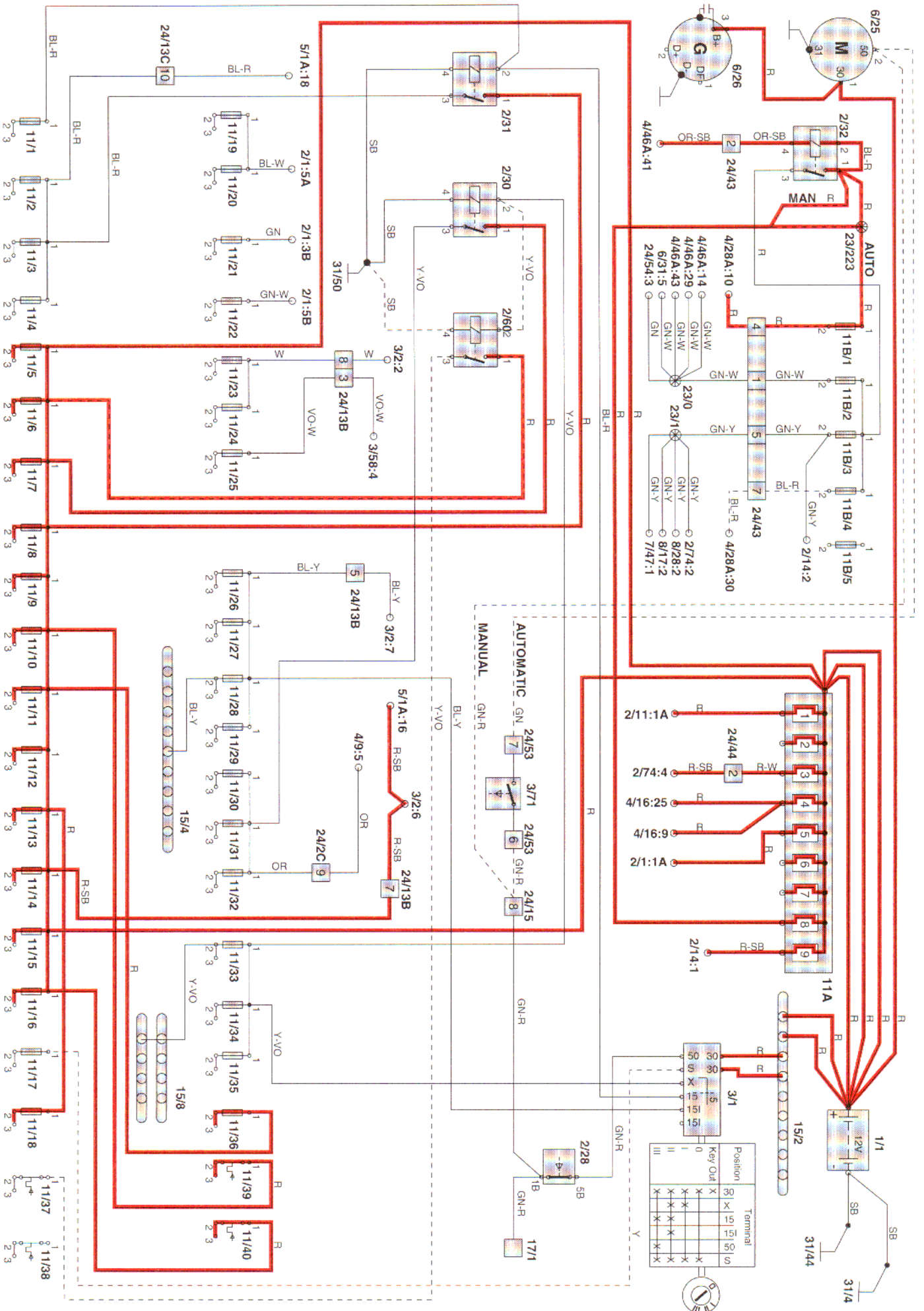
2/74 Extra heater relay



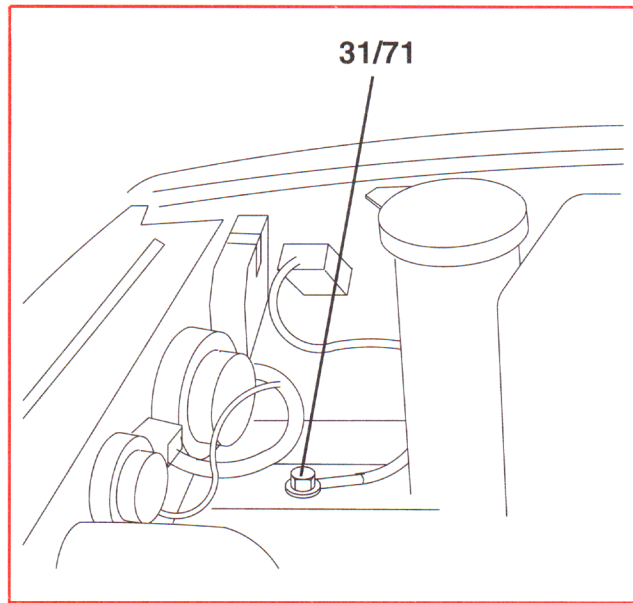
# Electrical distribution



# Electrical distribution, Diesel

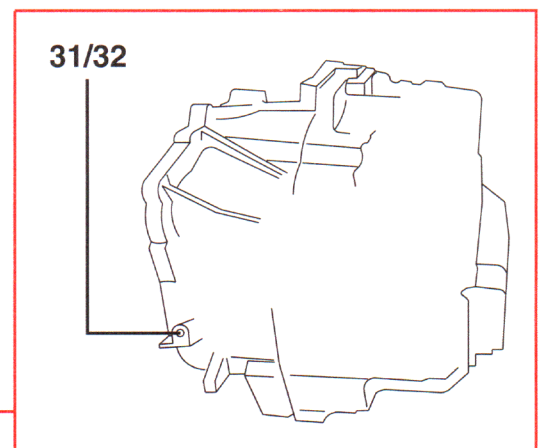
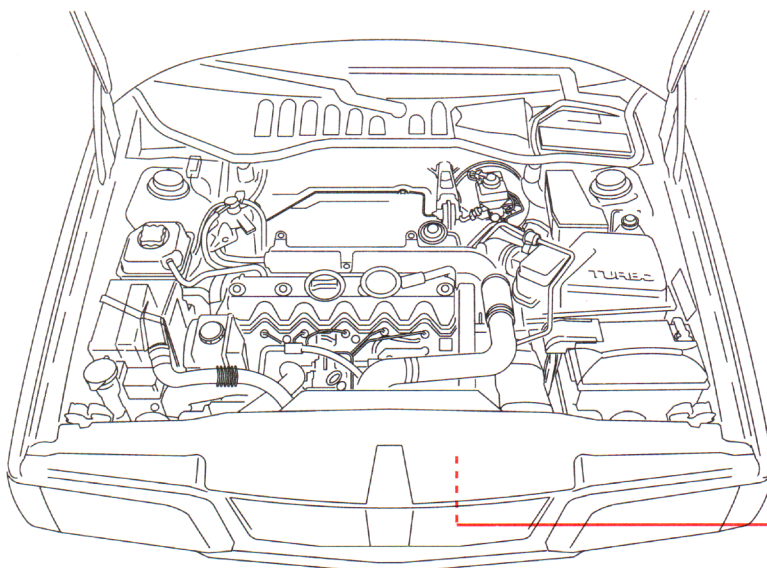


## Ground point 31/71



Ground point right side member in engine compartment

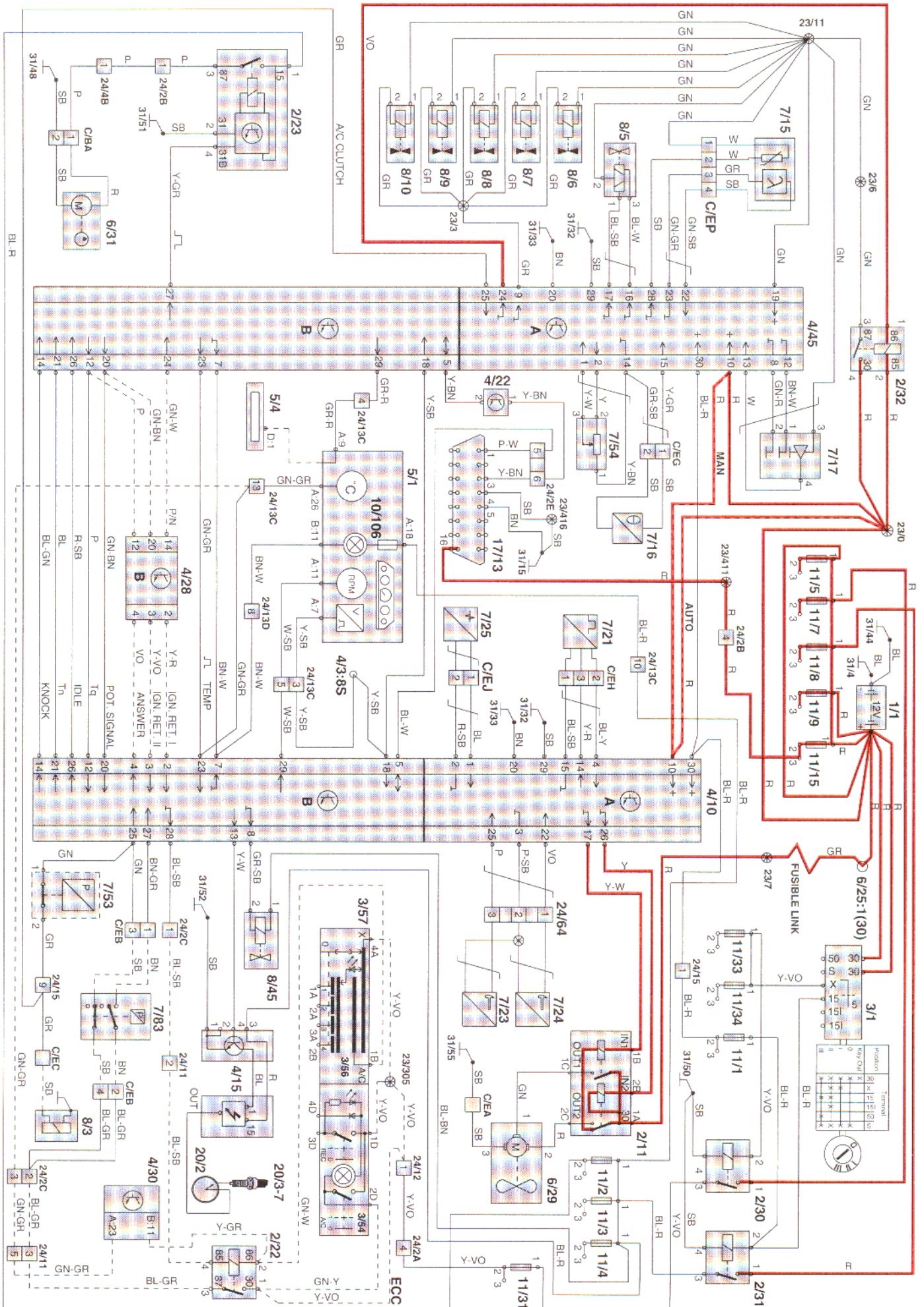
## Diesel ground point 31/32



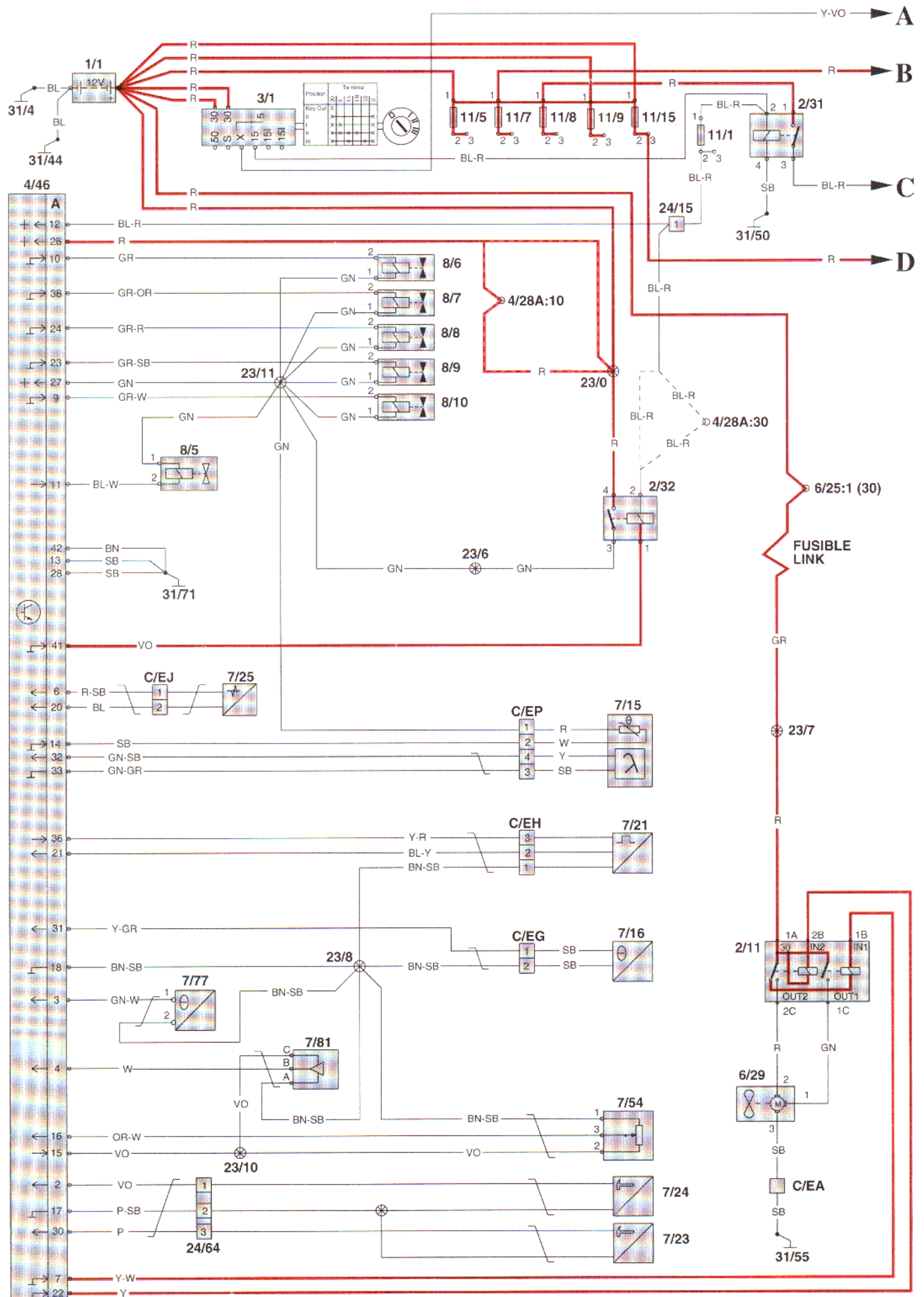
Engine ground point



# Multiport fuel injection (MFI) systems, LH-jetronic 3.2 & EZ 129 K

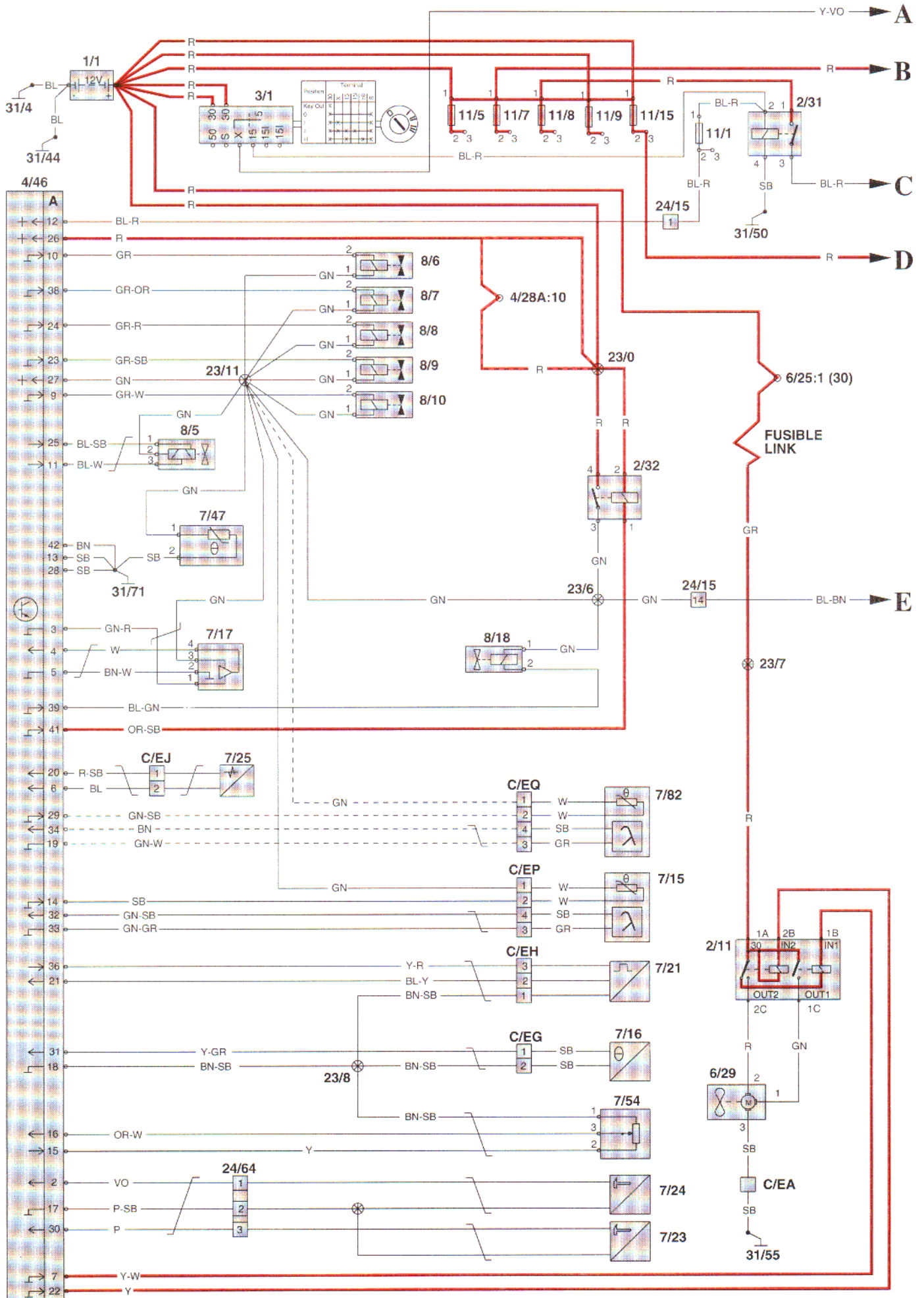


# Multipoint fuel injection (MFI) system, Fenix 5,2



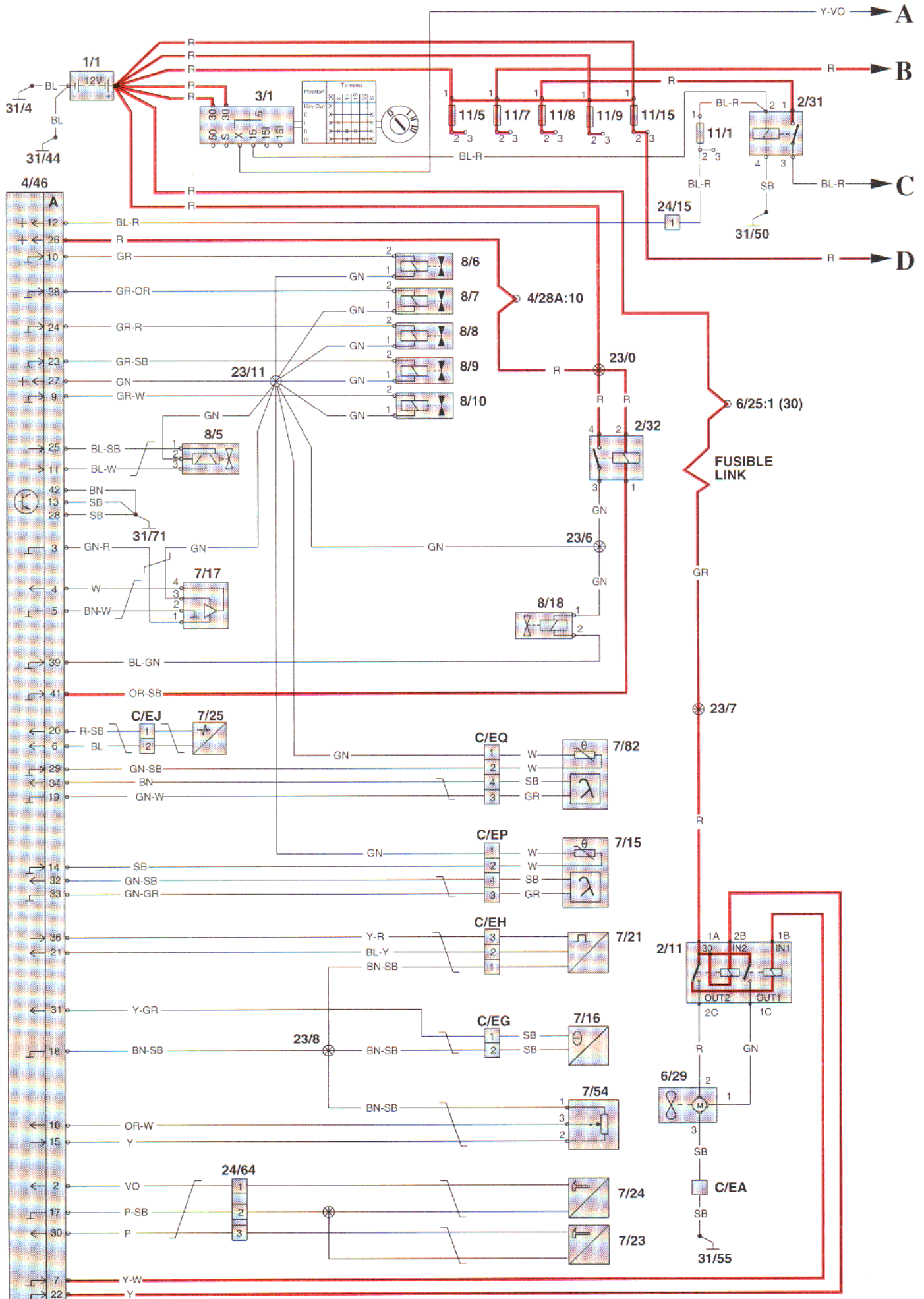


# Sequential fuel injection (SFI) system Motronic 4.3 (B 5204 T, B 5234 T)

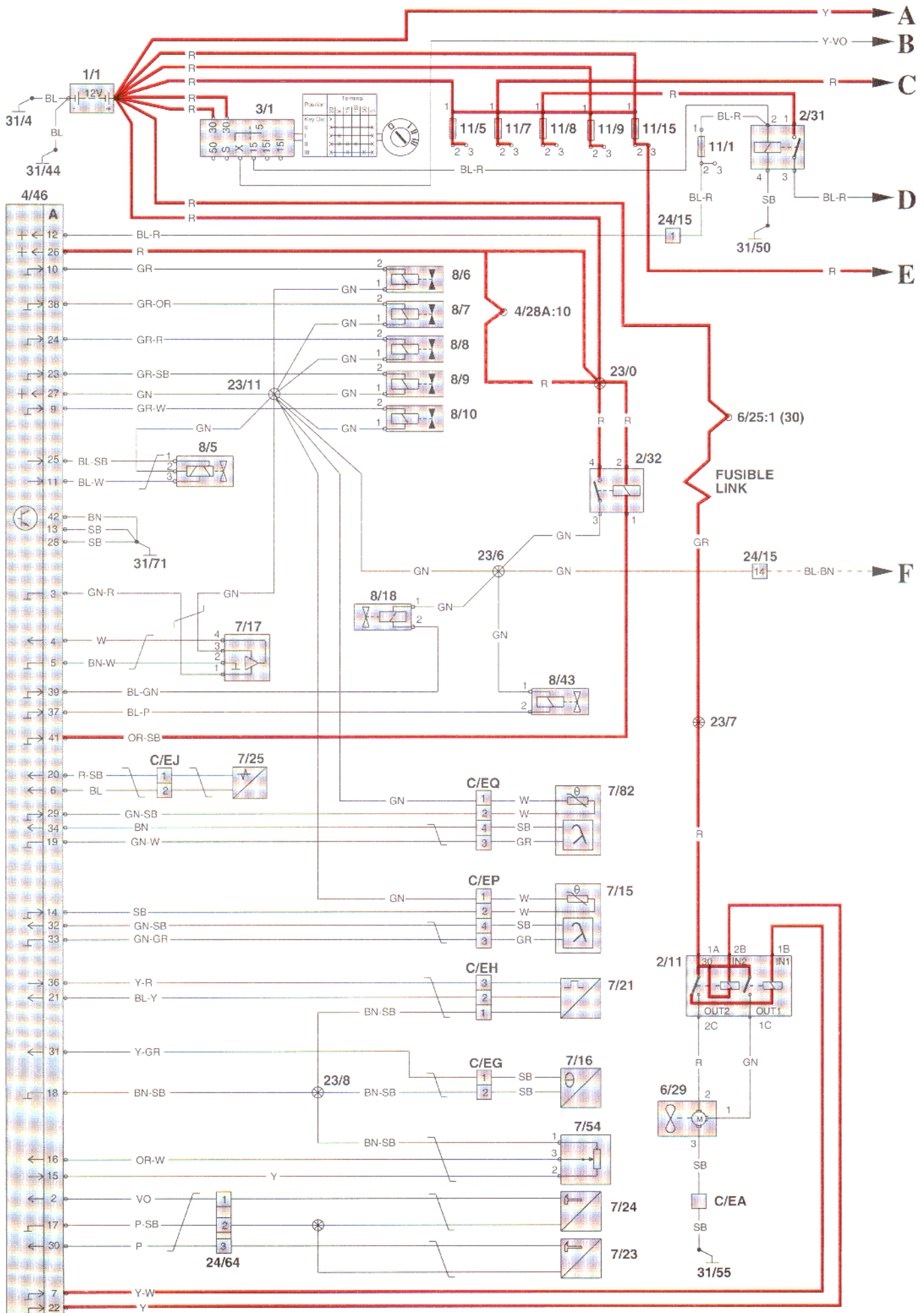




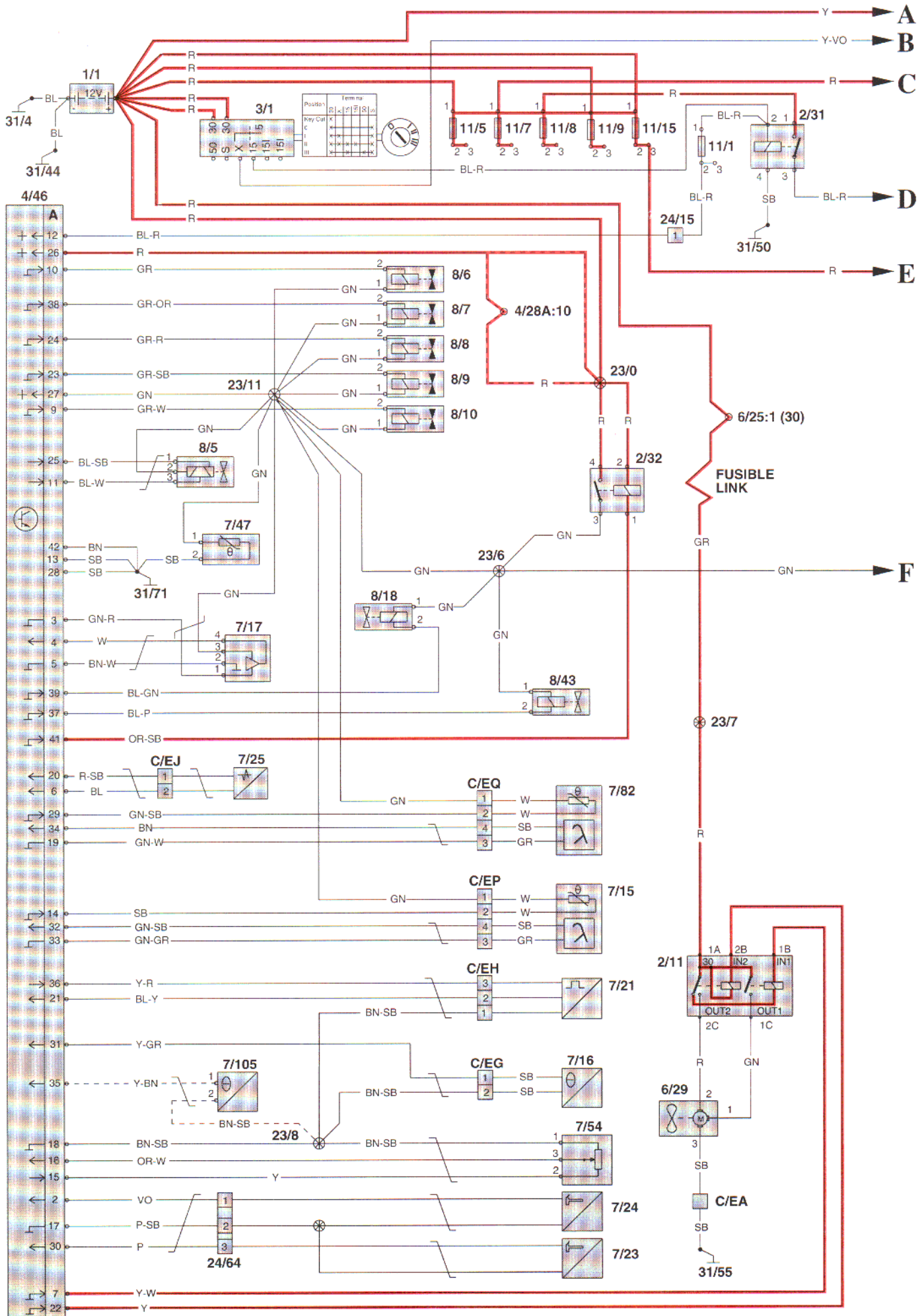
# Sequential fuel injection (SFI) system, Motronic 4.3 (B 5254 S)



# Sequential fuel injection (SFI) system, Motronic 4.4 (B 5254 S)

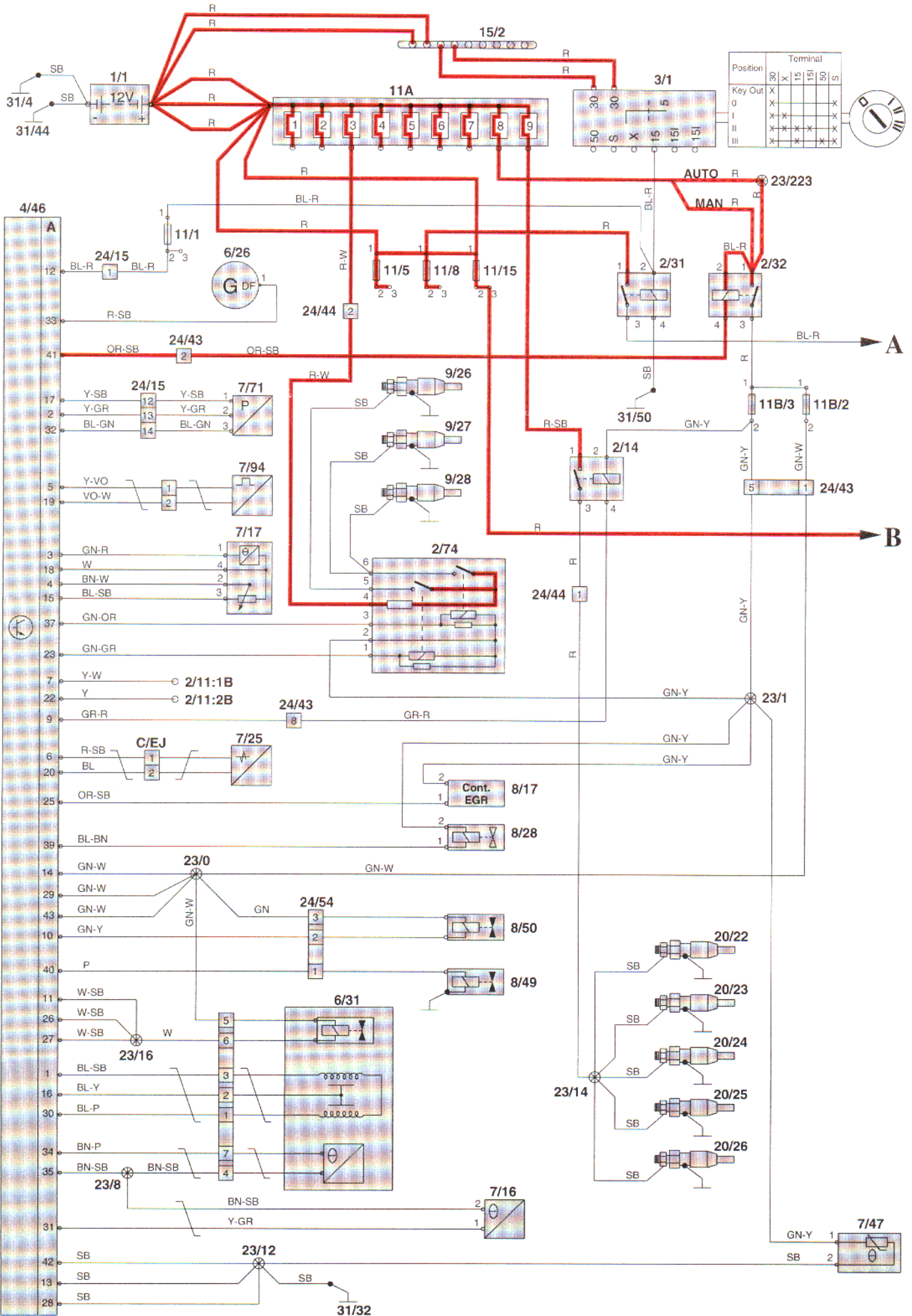


# Sequential fuel injection (SFI) system, 4.4 (B 5254 T)

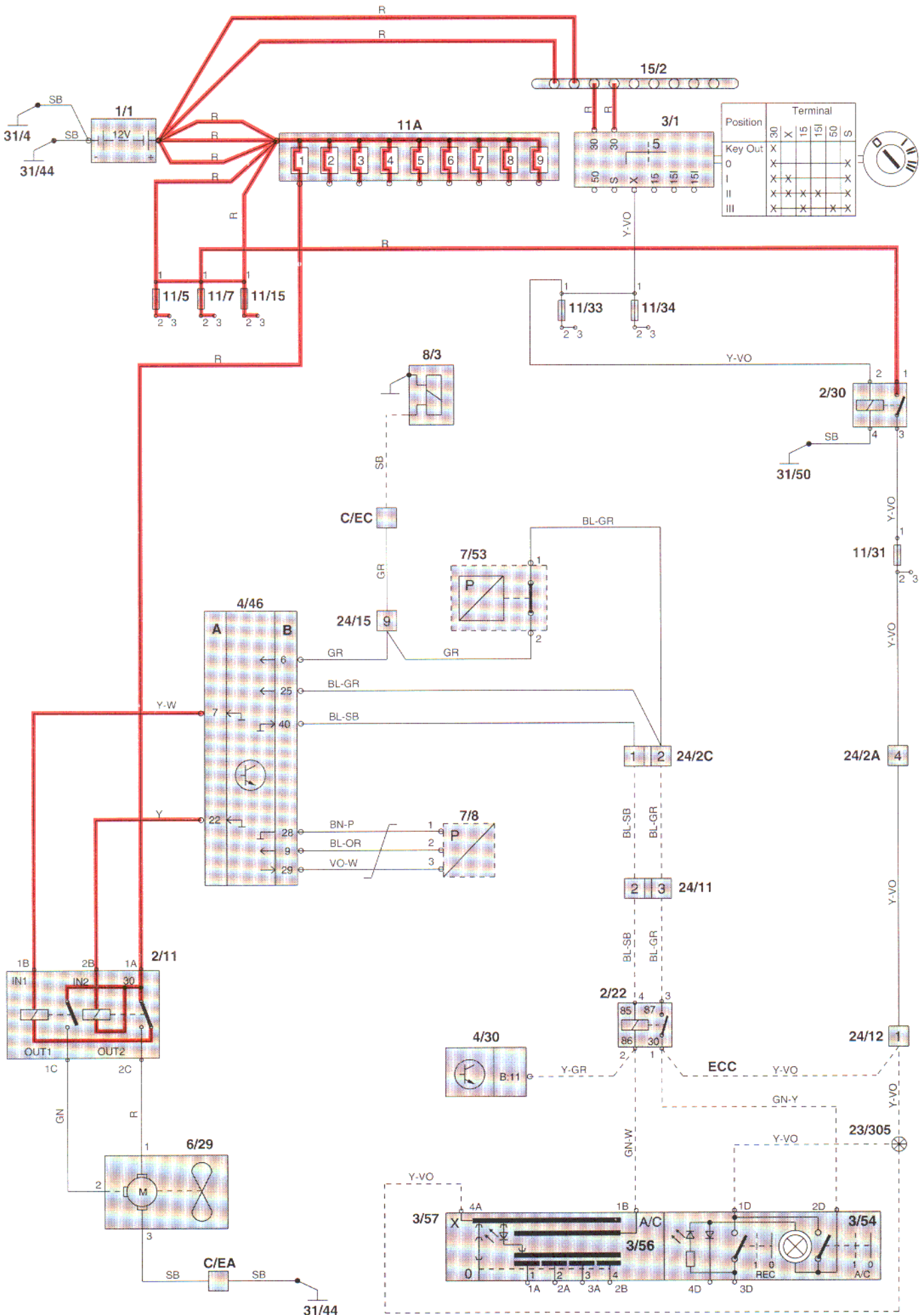




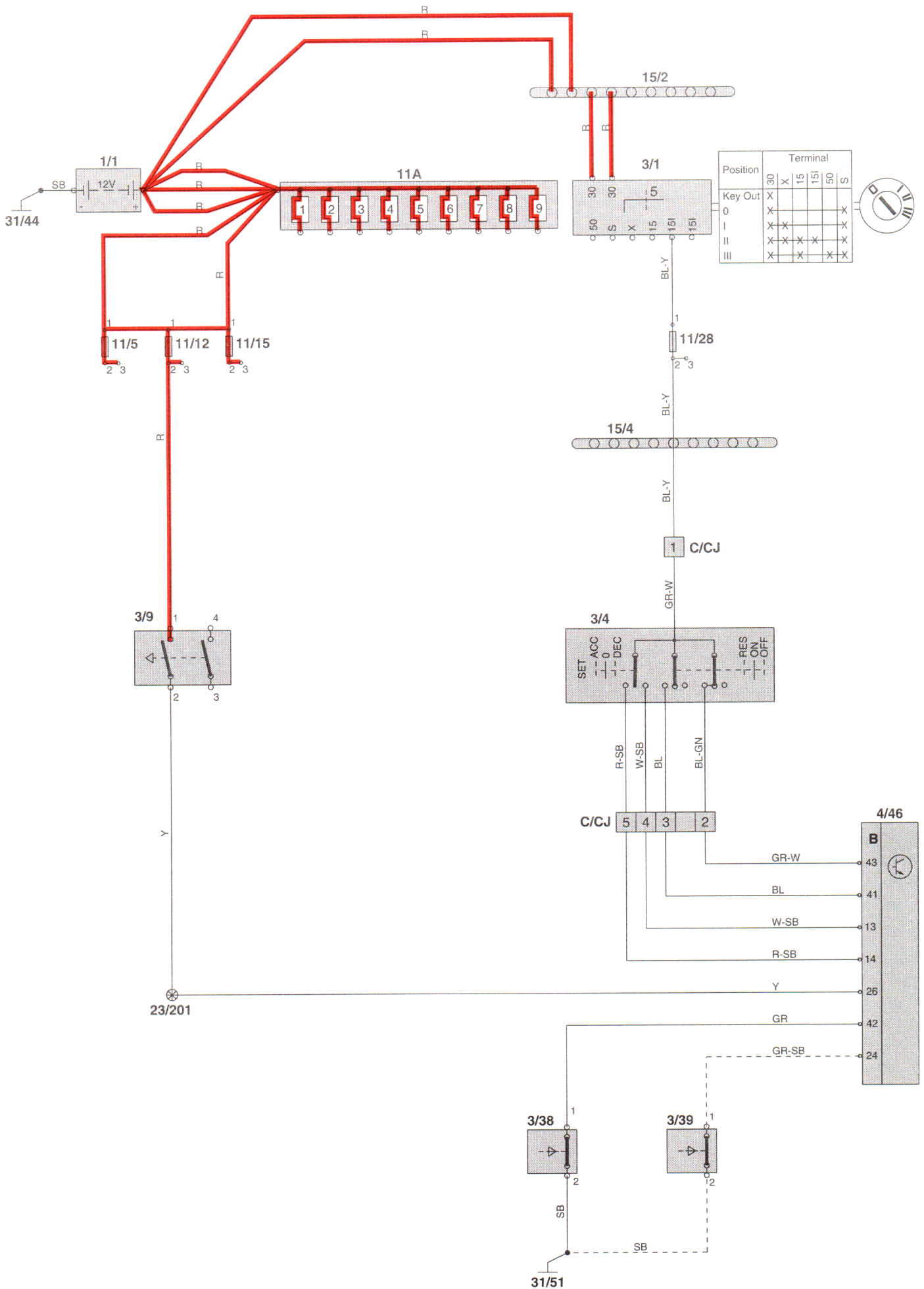
# Engine management system MSA 15.7



# Engine coolant fan (FC), Diesel

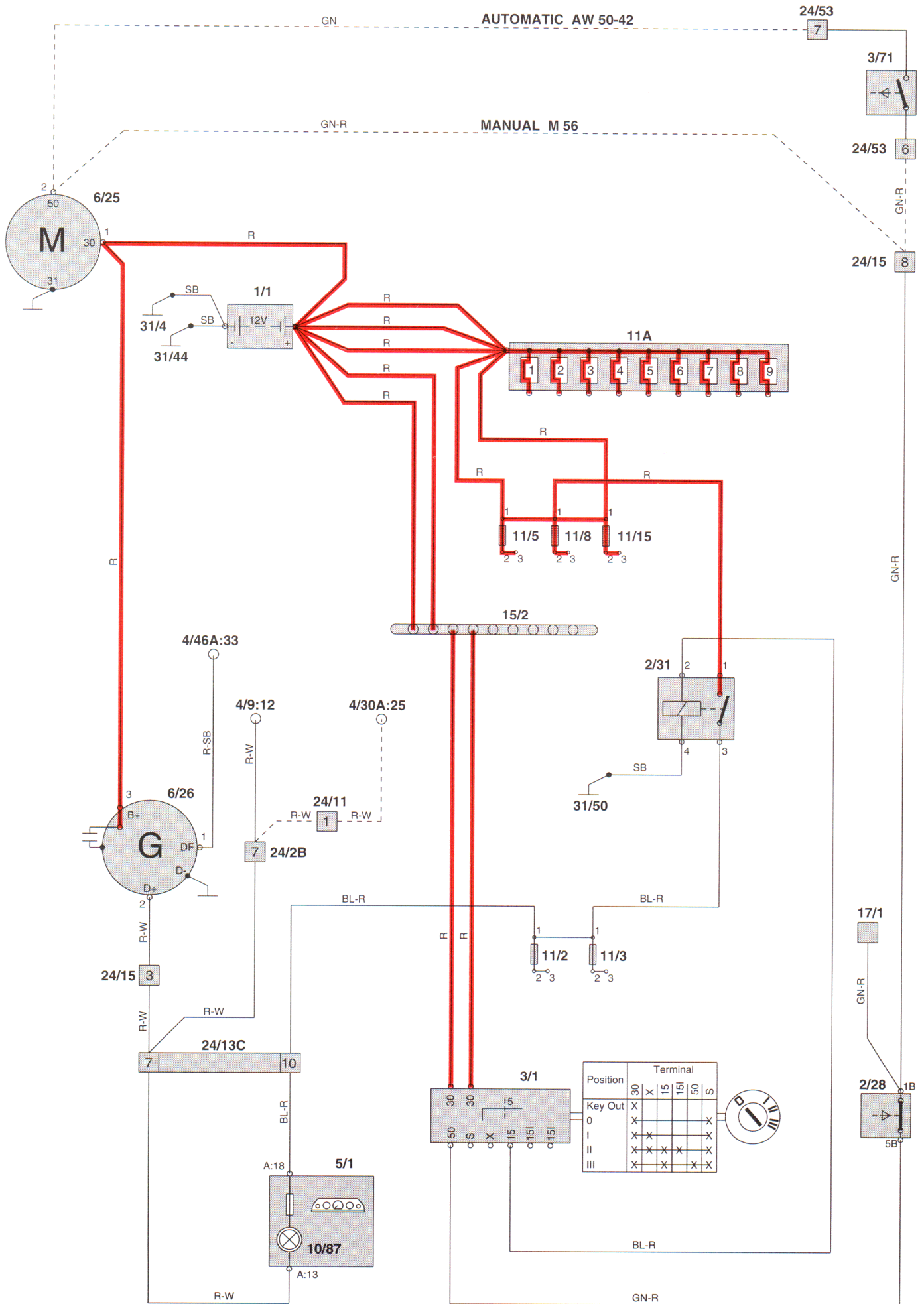


# Cruise control, Diesel

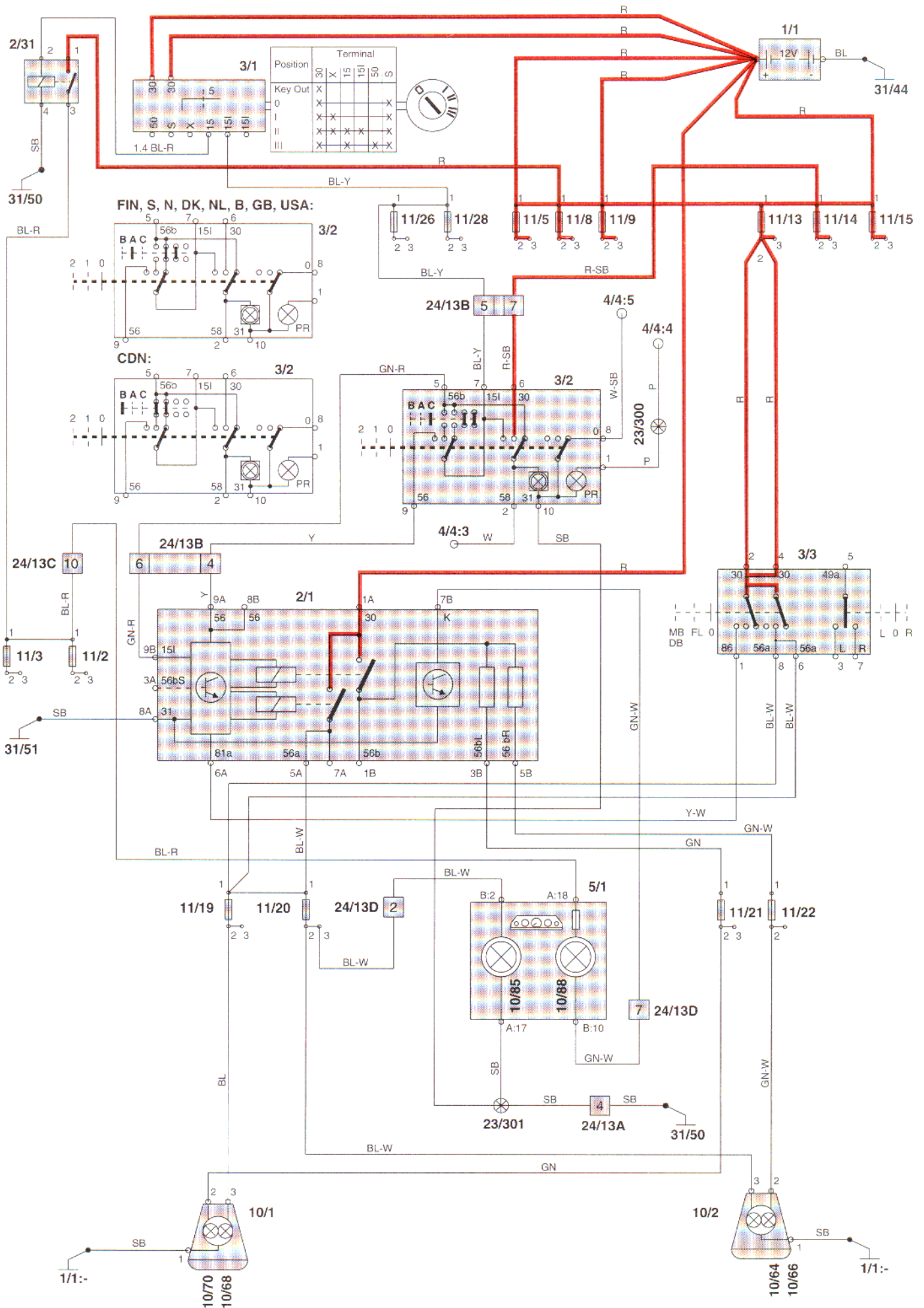




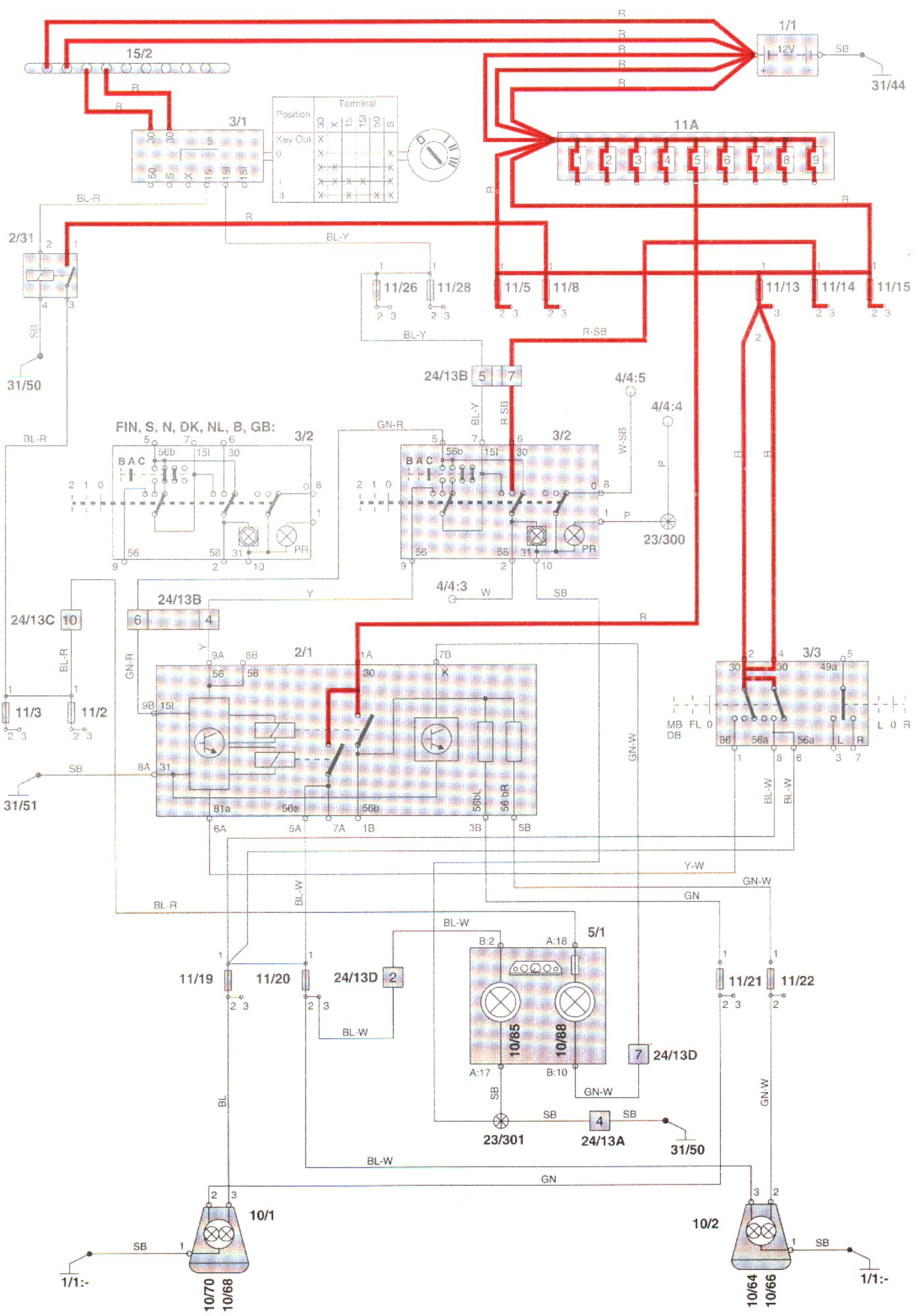
# Power supply and starting system, Diesel



# High and low beams

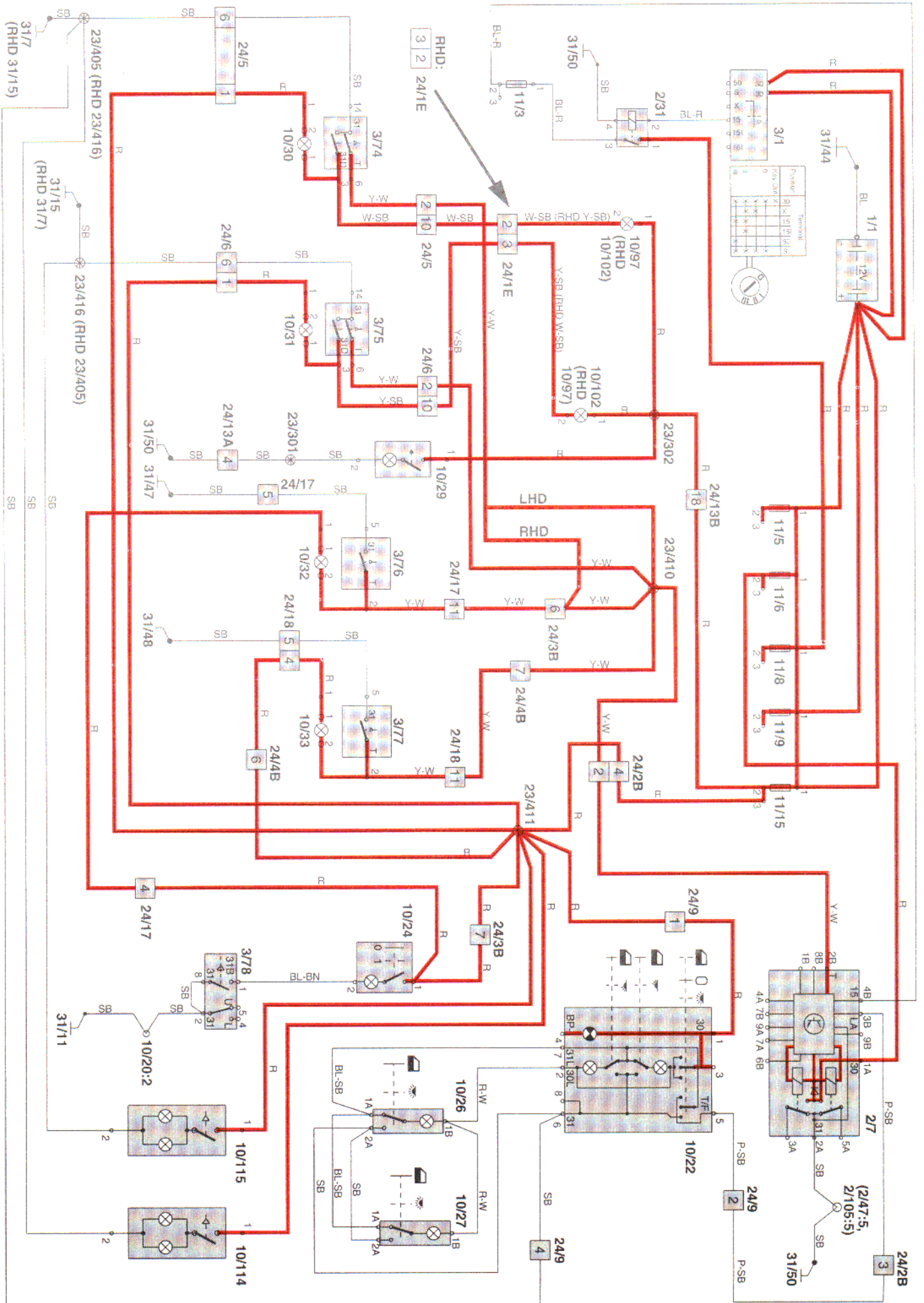


# High and low beam, Diesel

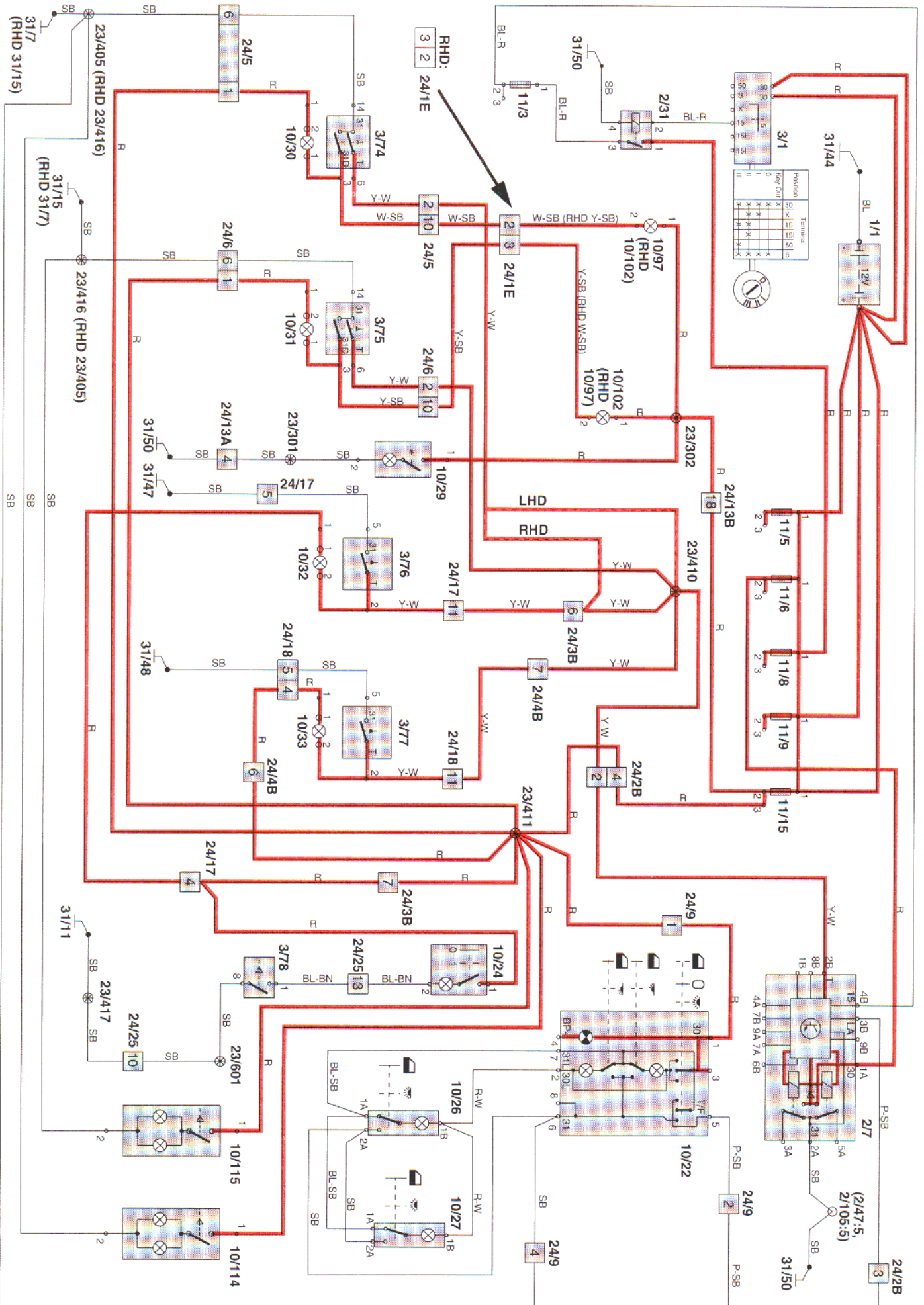


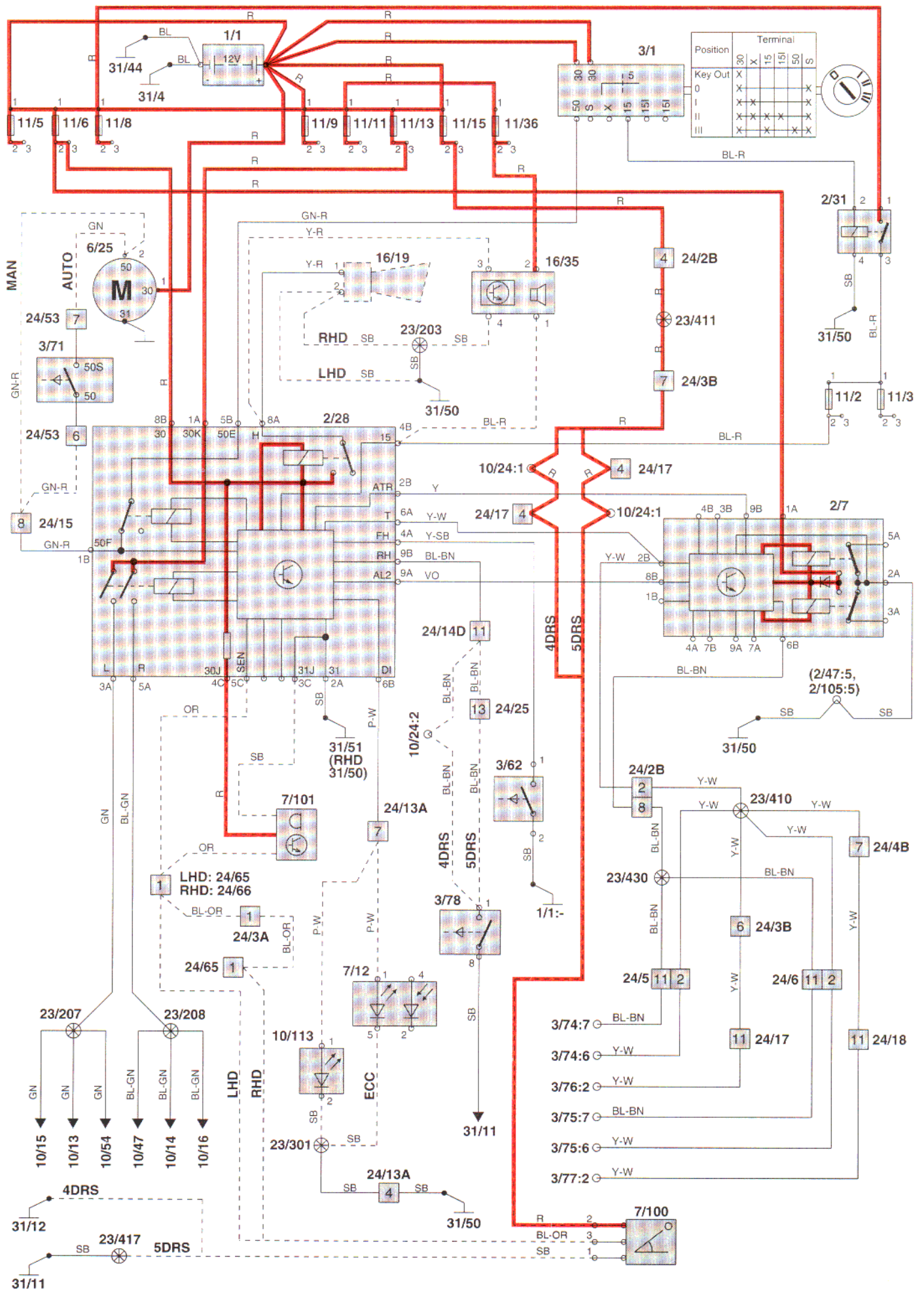


# Courtesy light, (4-door)



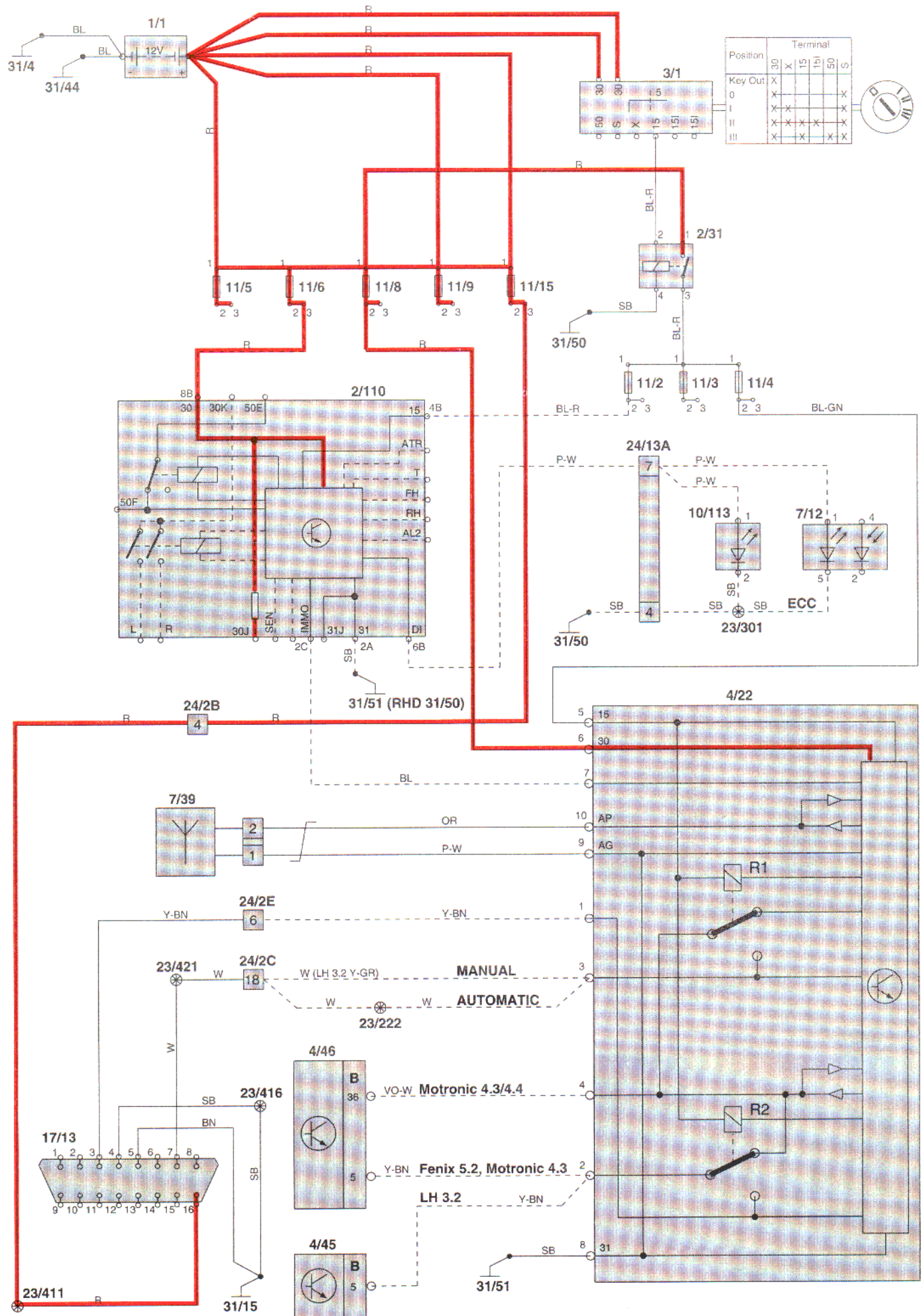
# Courtesy light, (5-door)





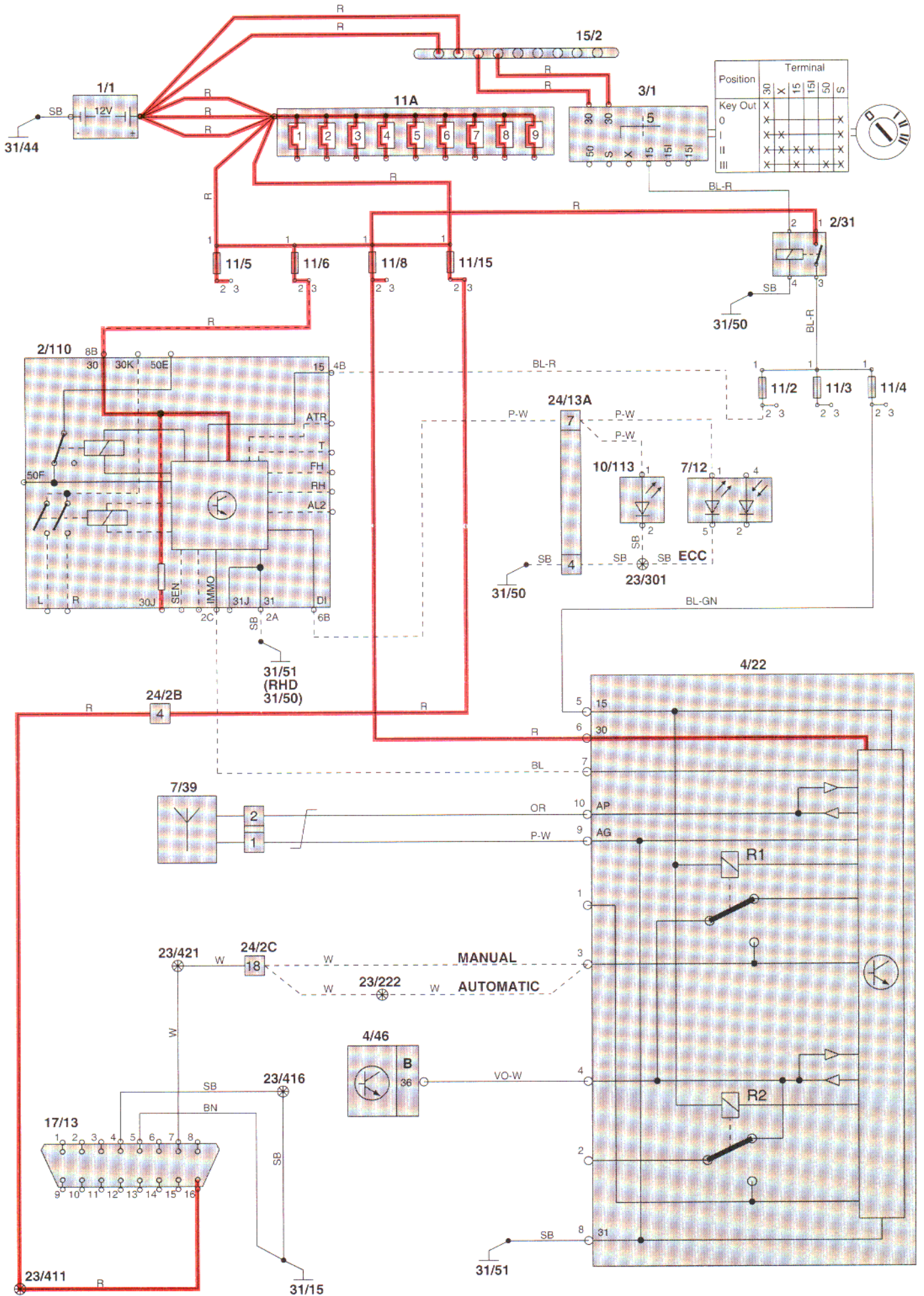


# Electronic Immobilizer

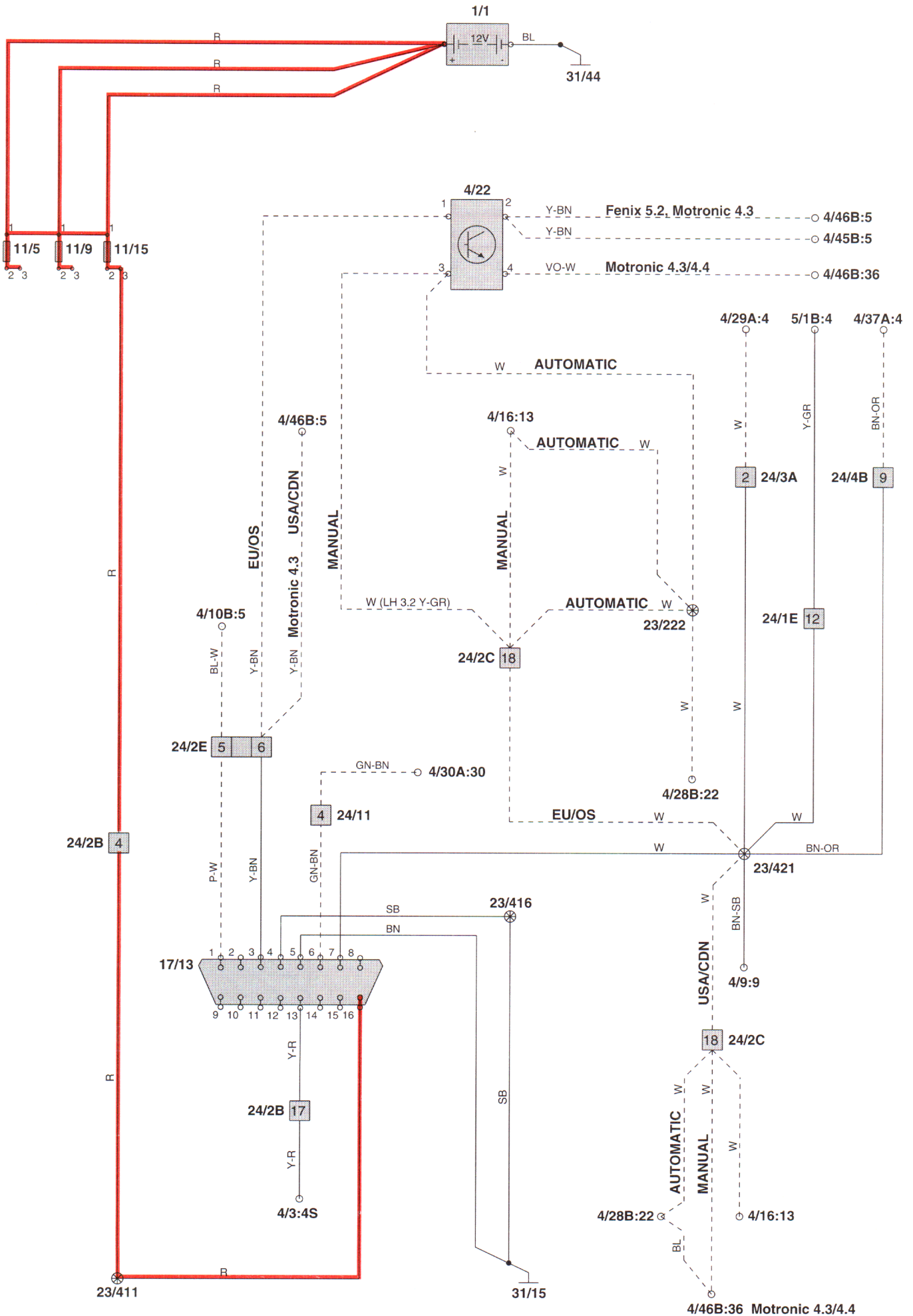




# Electronic Immobilizer, Diesel

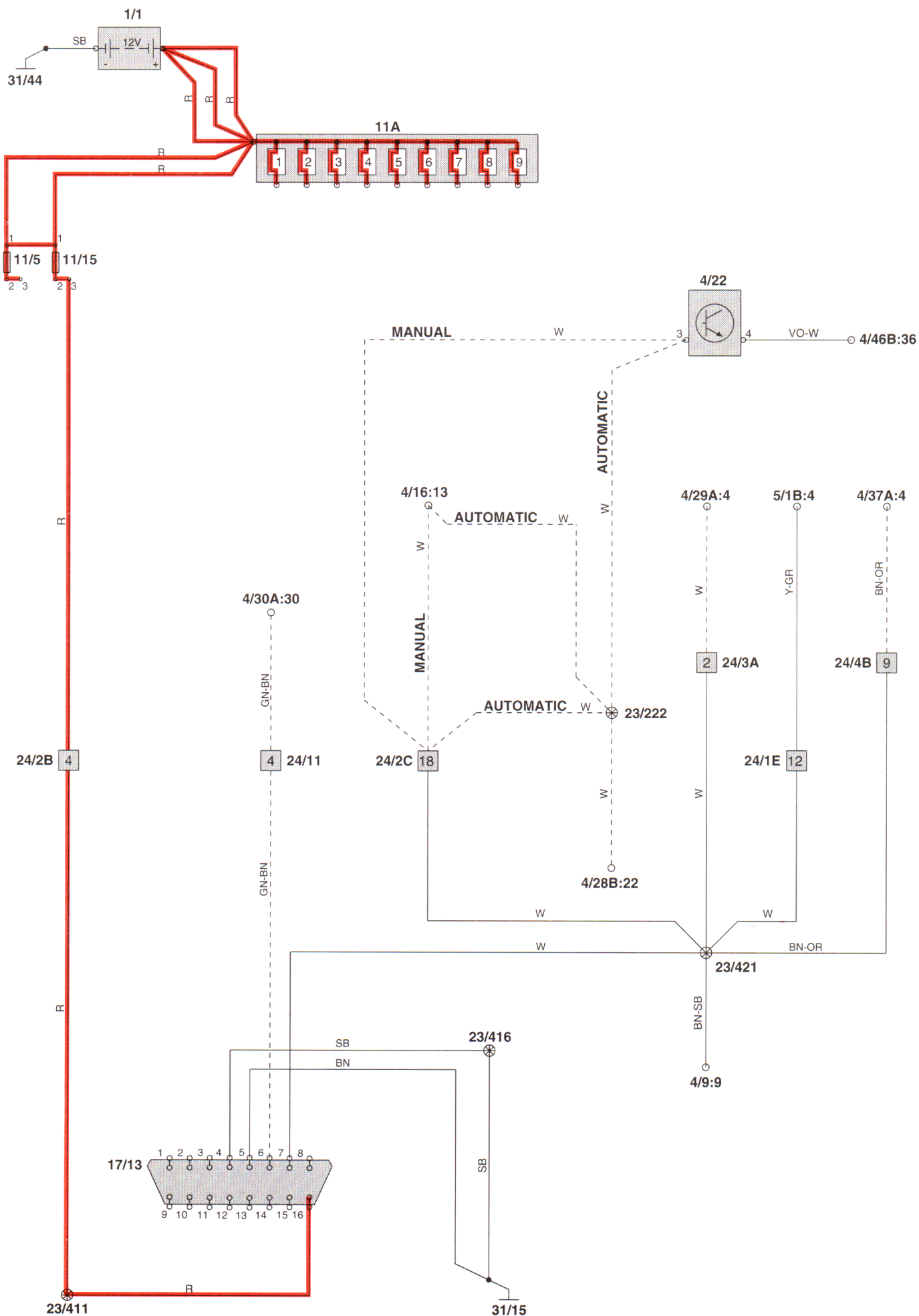


# On-board diagnostic system (OBD system)

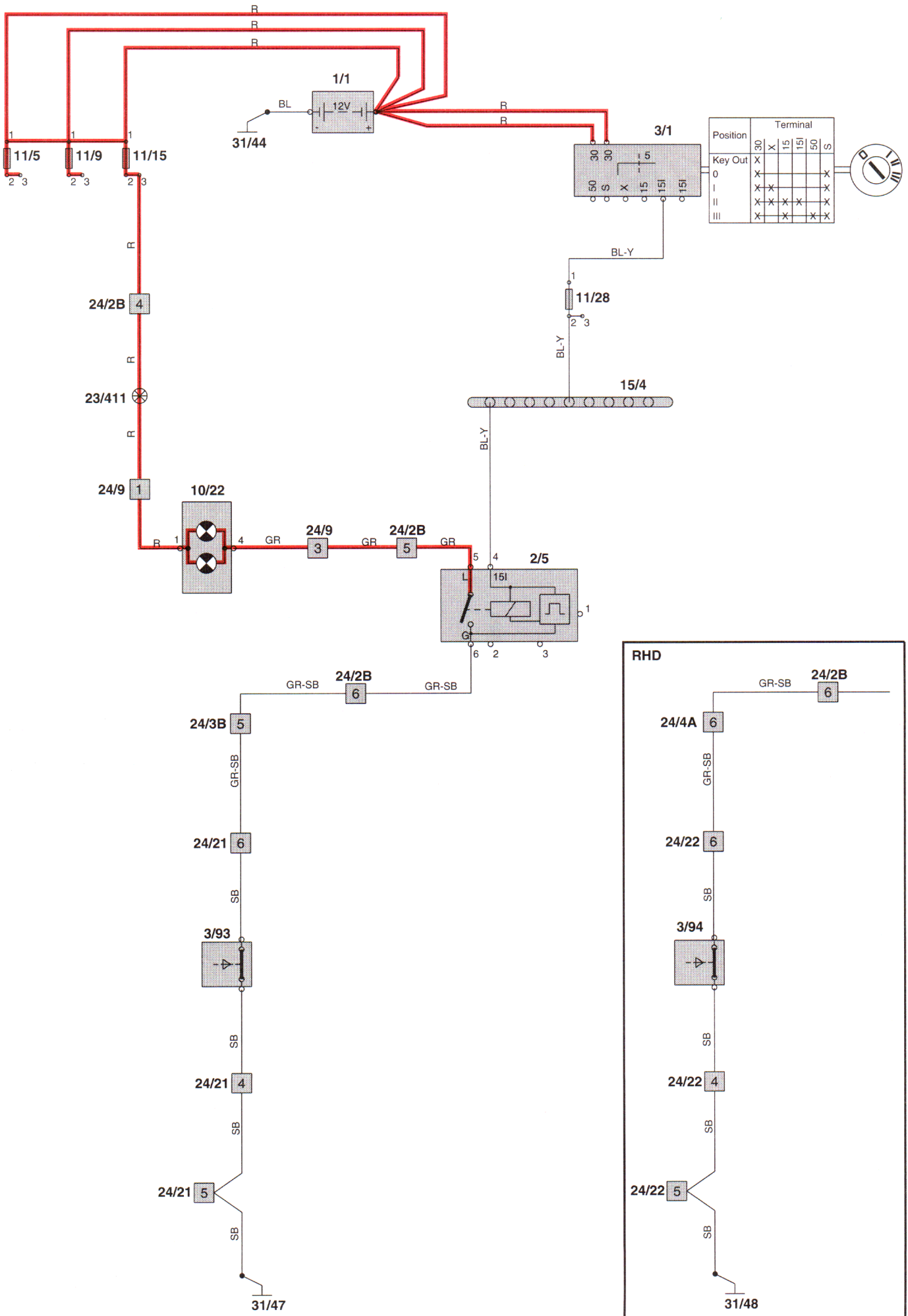




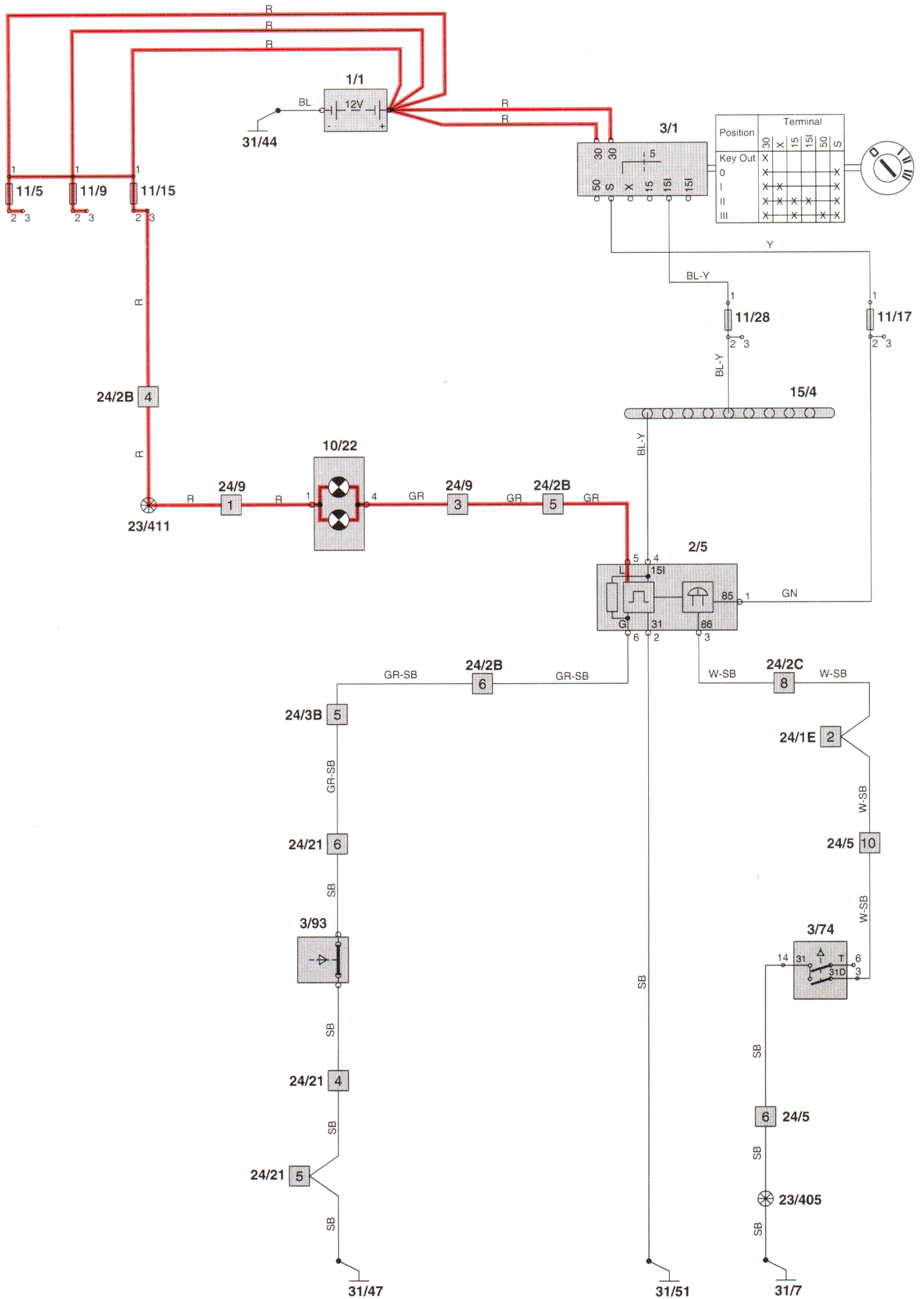
# On-board diagnostic system (OBD system), Diesel



# Seat belt reminder

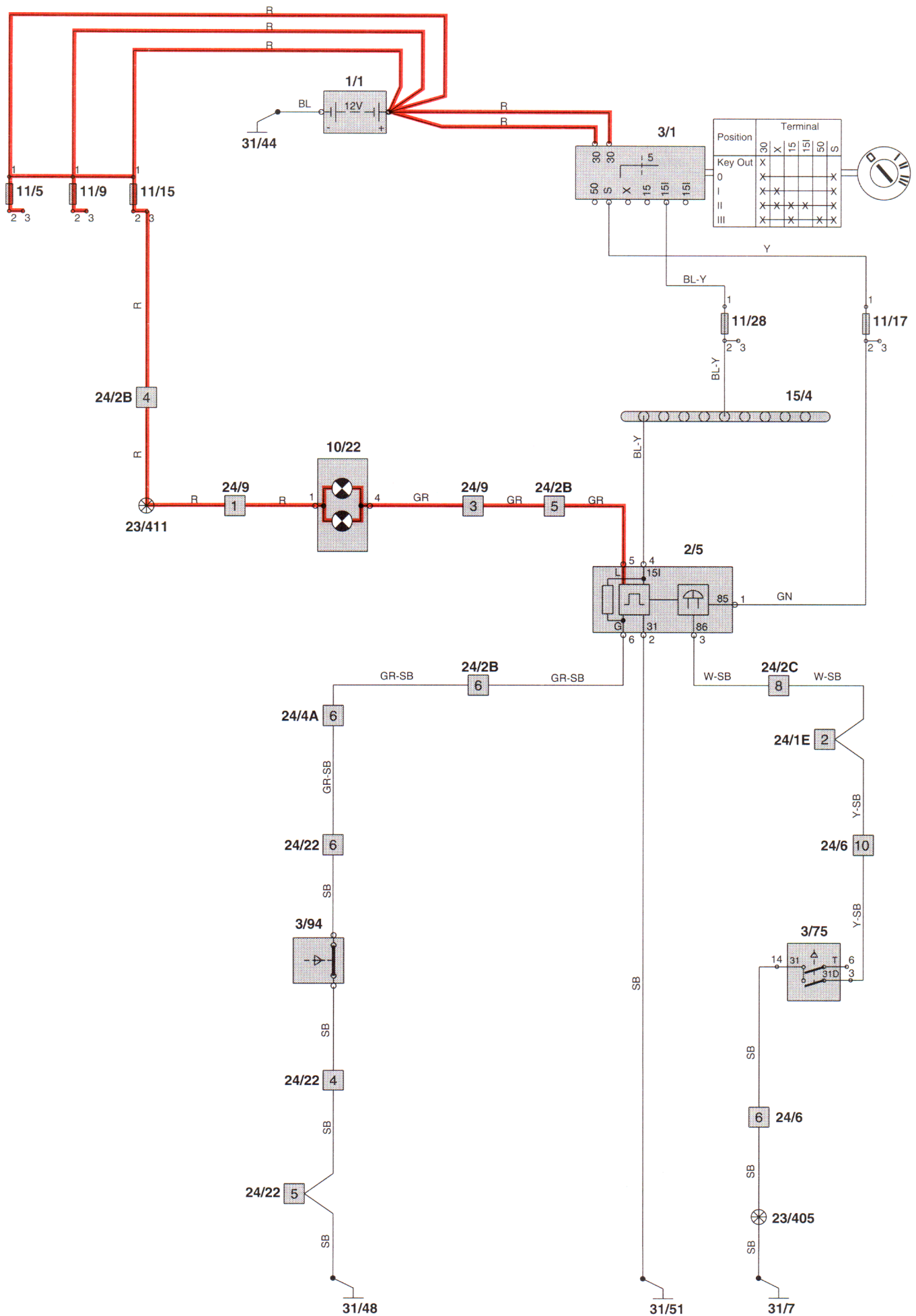


# Seat belt and key warning, USA, Canada, Korea

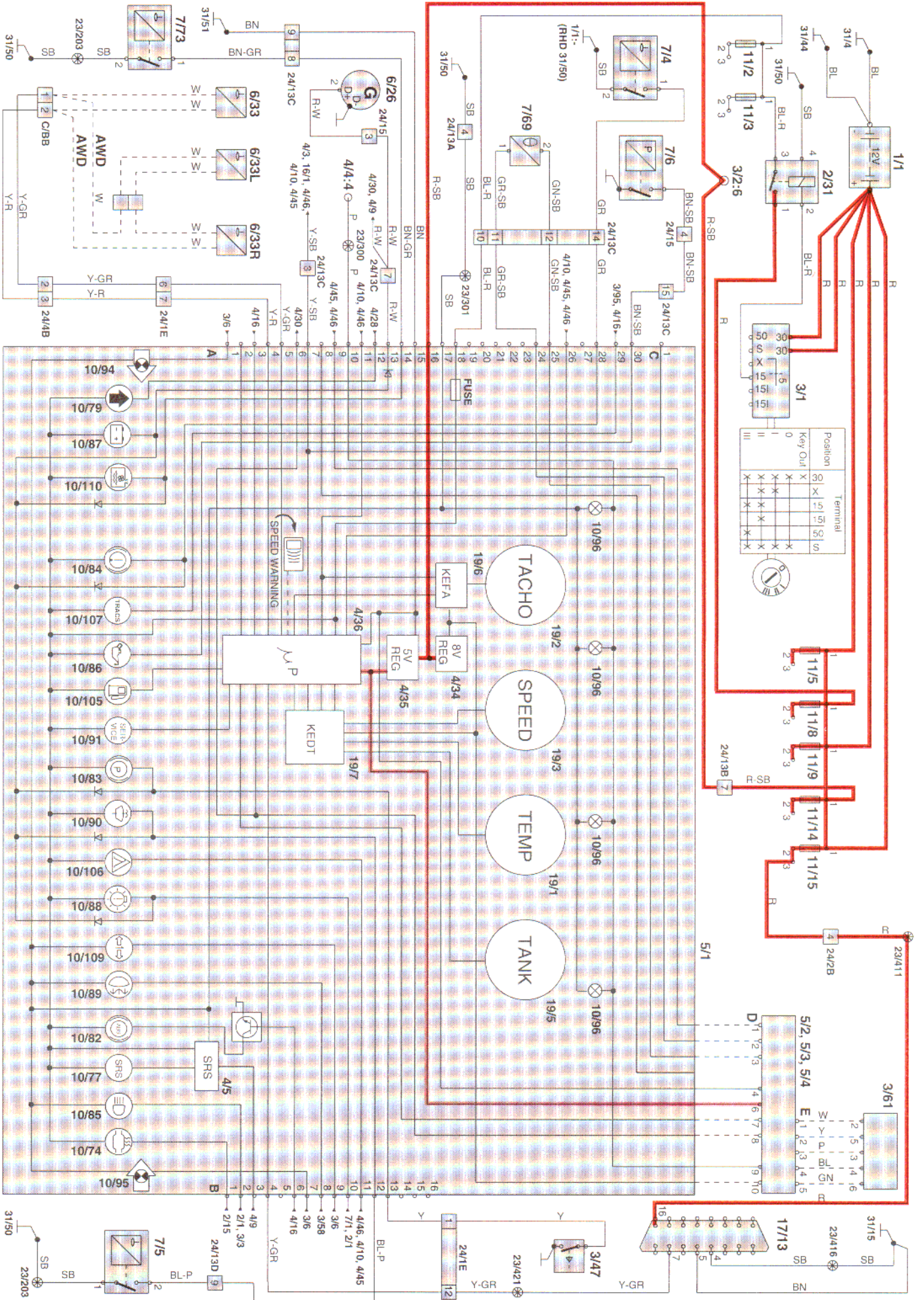




# Seat belt and key warning, Australia

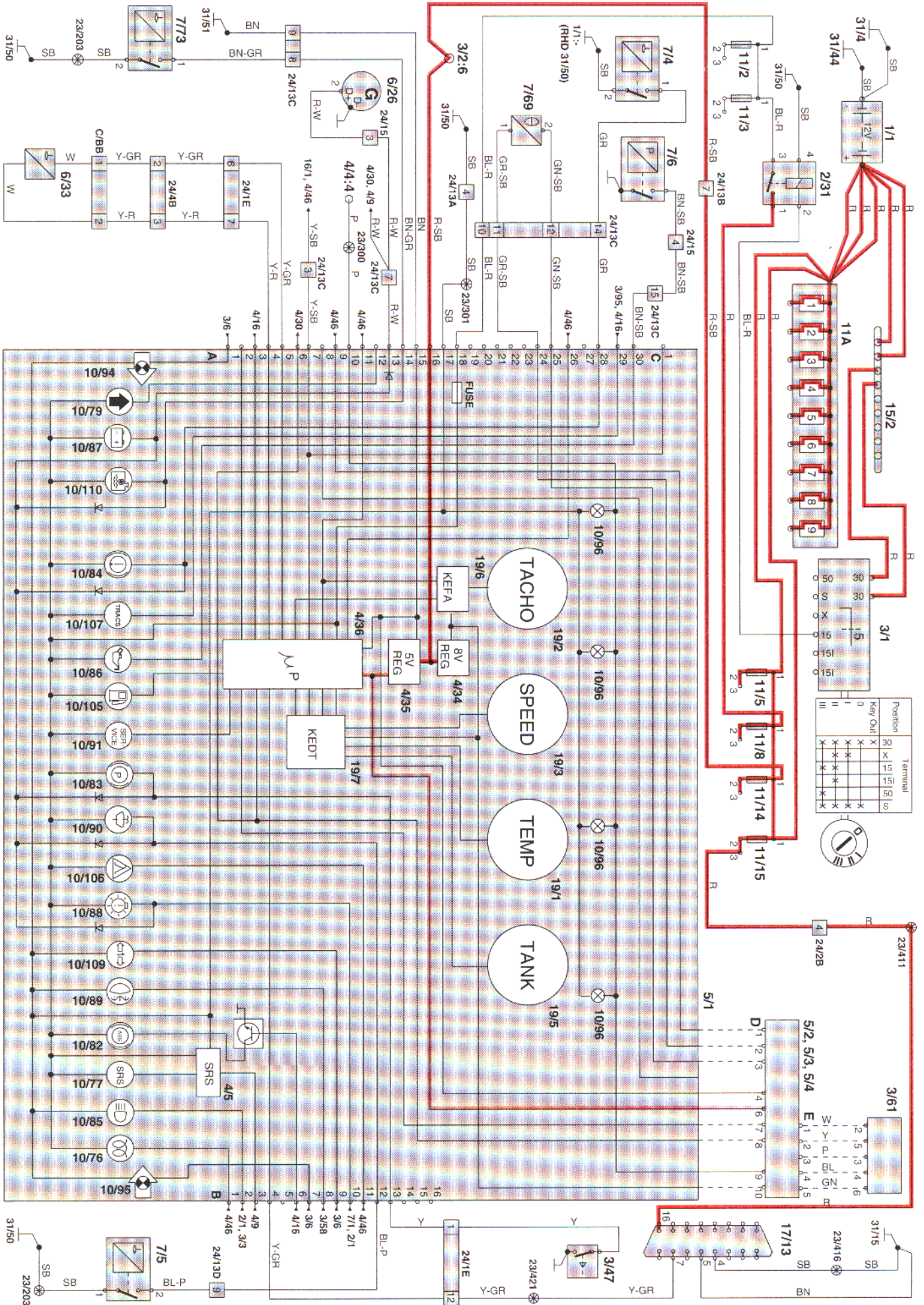


# Combined instrument panel VDO



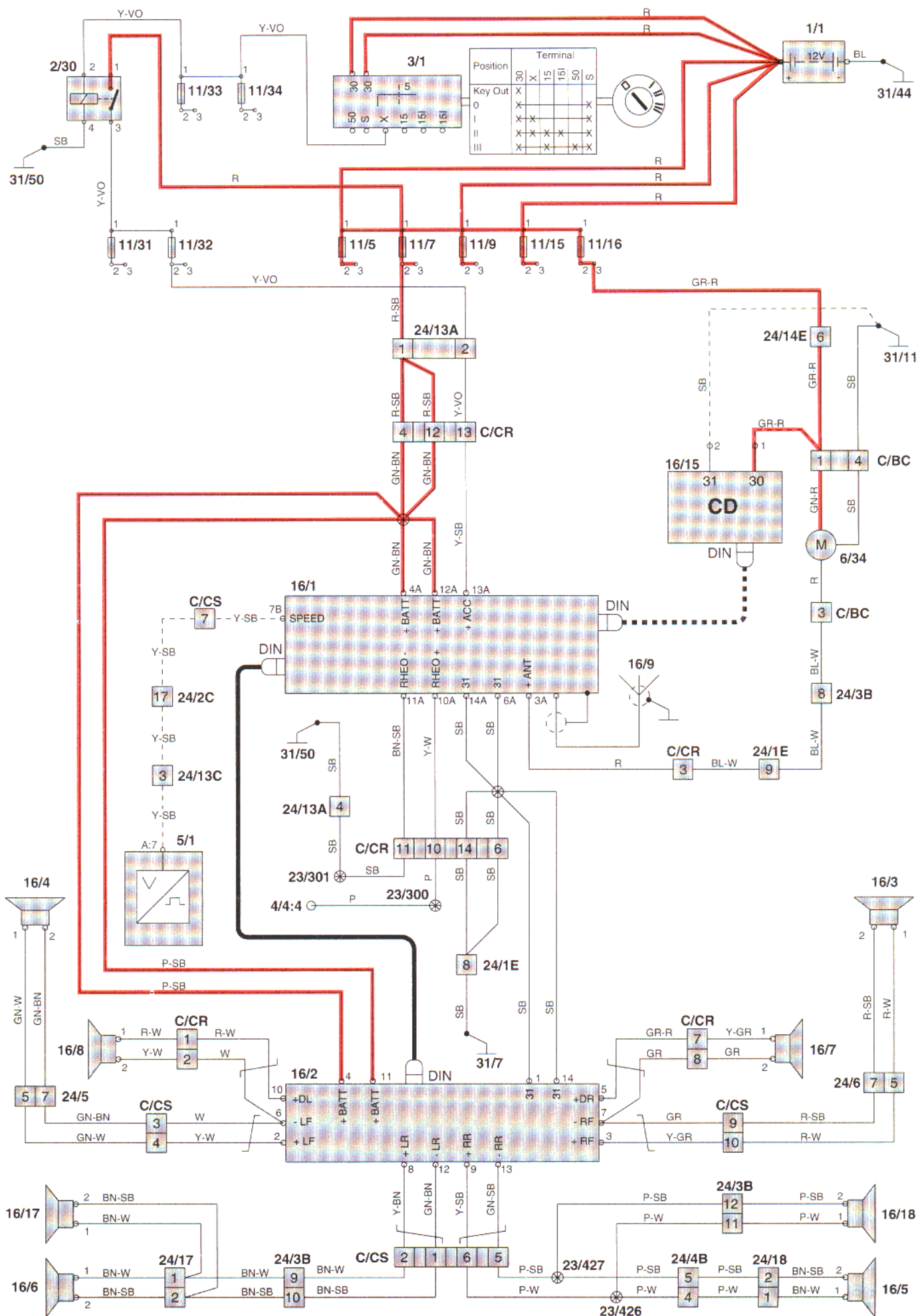


# Combined instrument panel VDO, Diesel

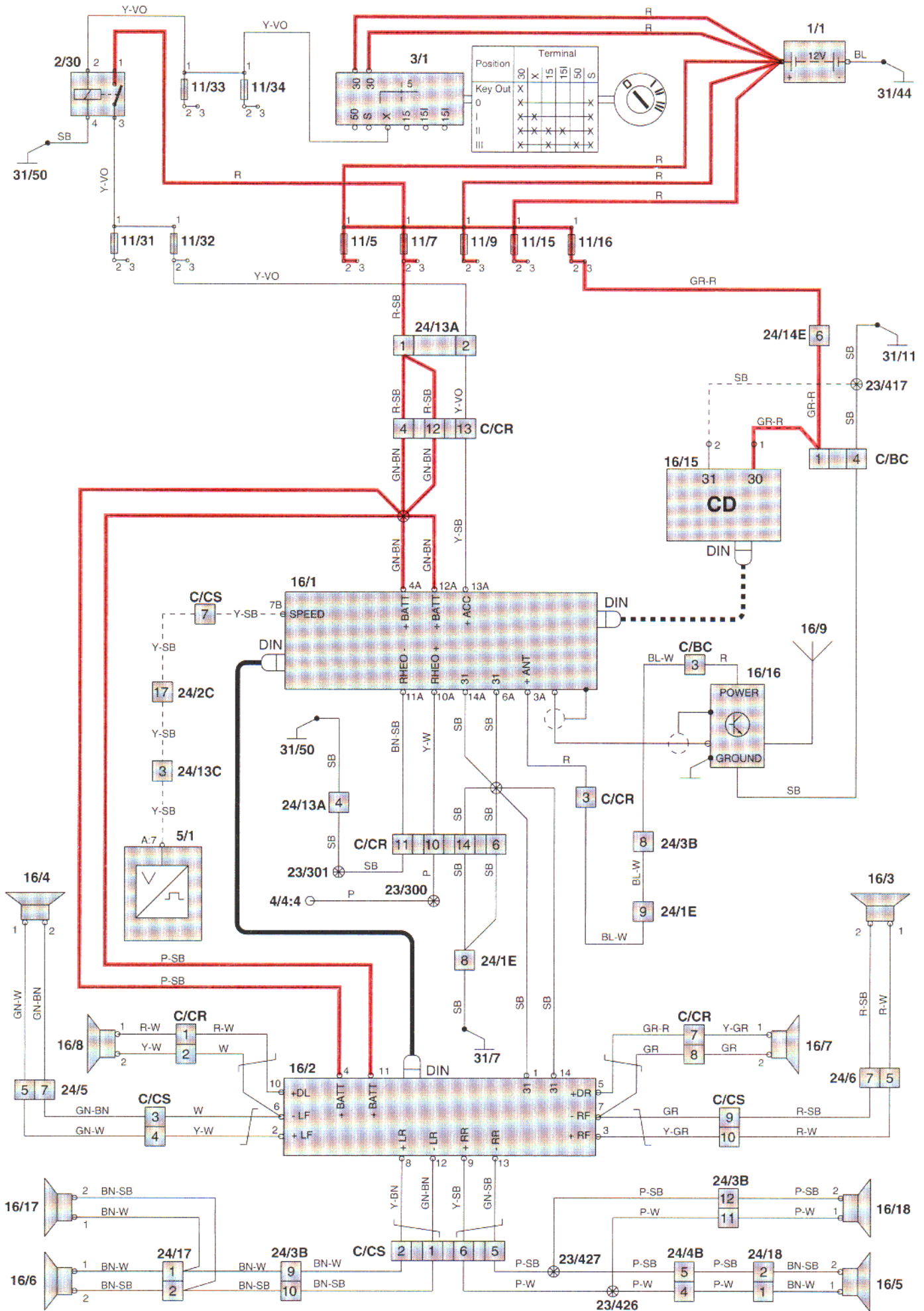




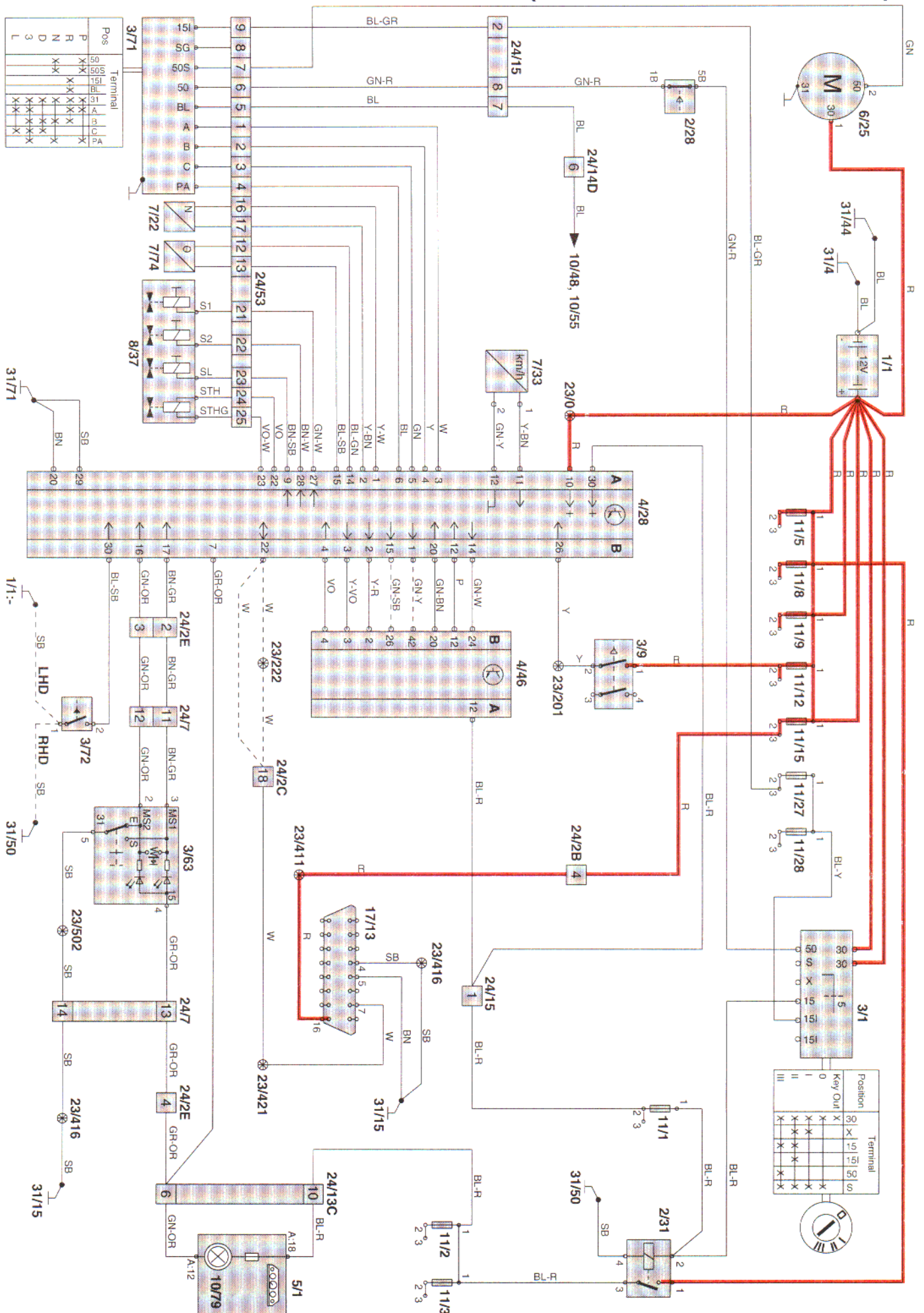
# Radio with 4x50 W extra amplifier, 4-door



# Radio with 4x50 W extra amplifier, 5-door



# AW 50-42 electronically controlled automatic transmission (Fenix 5.2, Motronic 4.3/4.4)

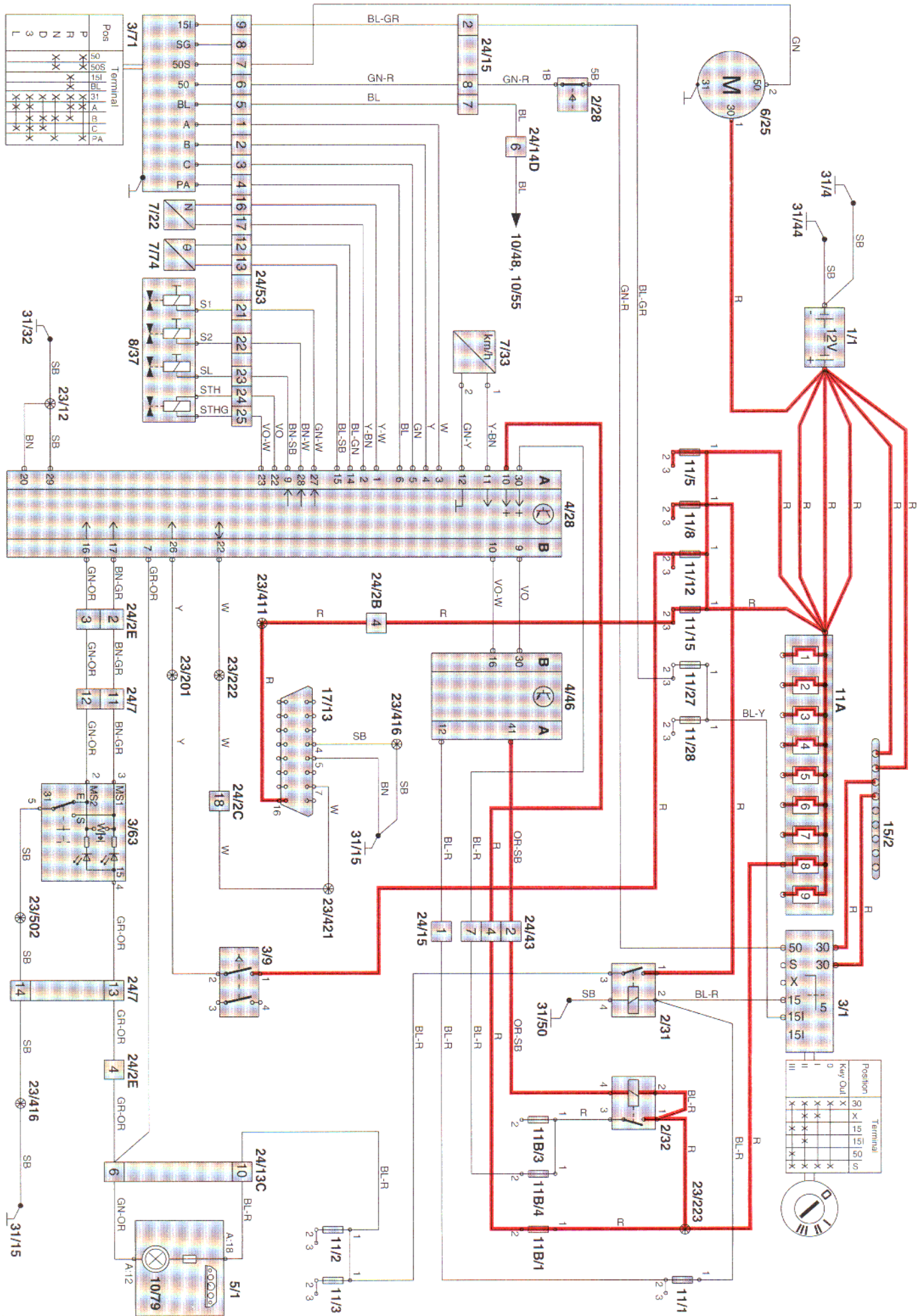


Pos	Terminal	Color
P	5	GN
R	15	BL
N	16	GN
D	17	GN
3	18	GN
L	19	GN

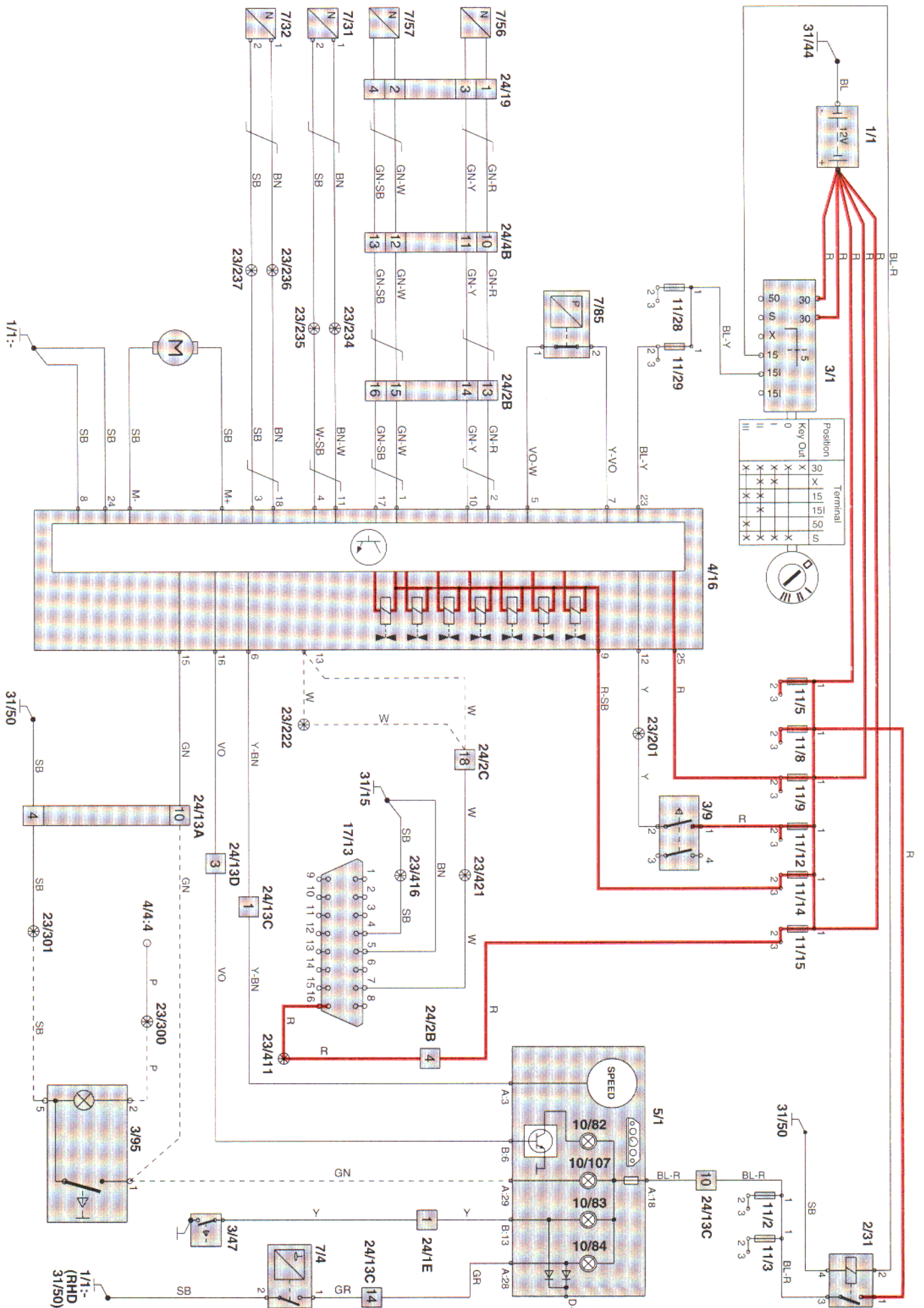
Position	Terminal
0	15
I	16
II	17
III	18



# AW 50-42 electronically controlled automatic transmission (MSA 15.7)



# ABS Brake system and TRACS

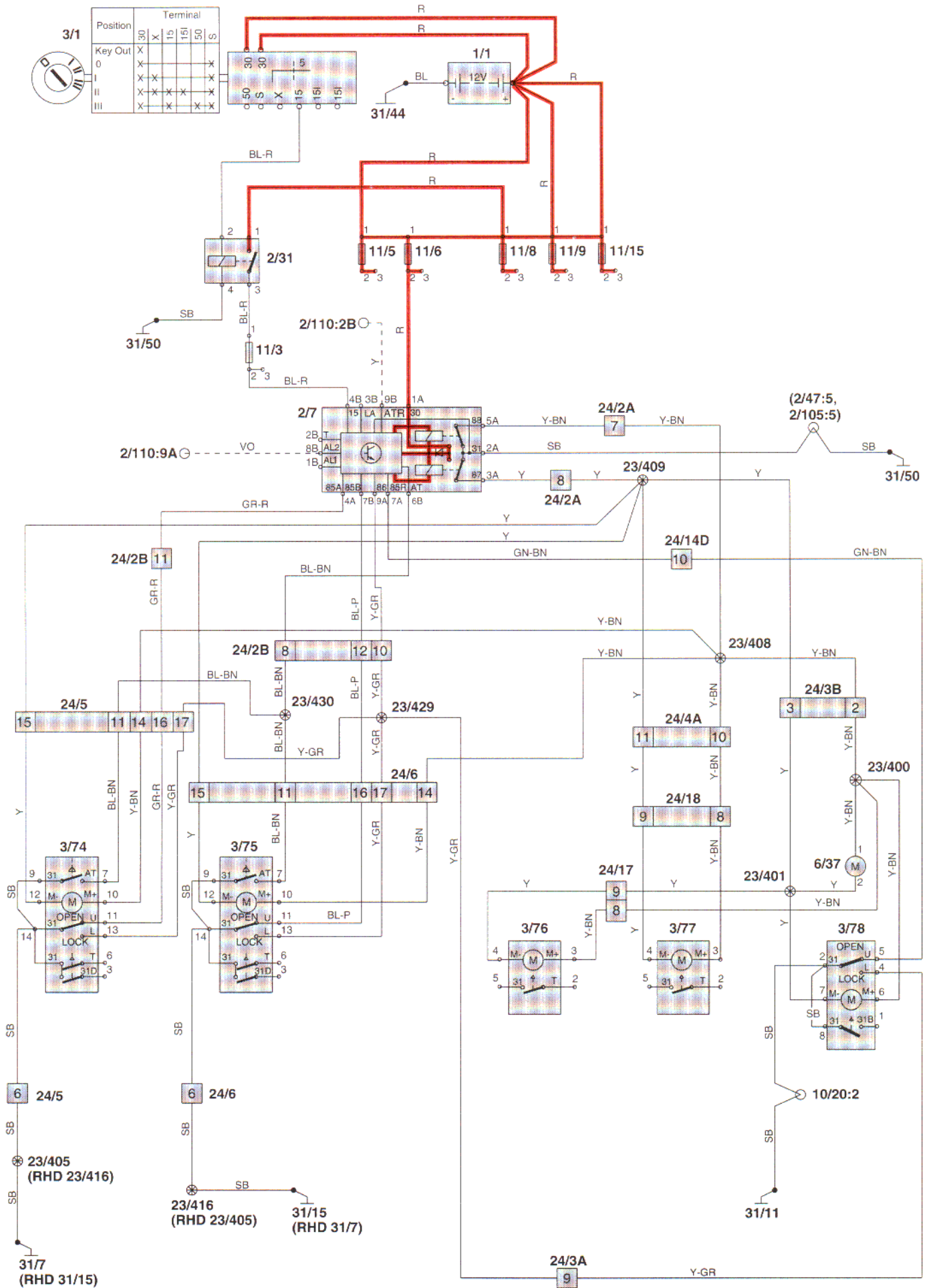




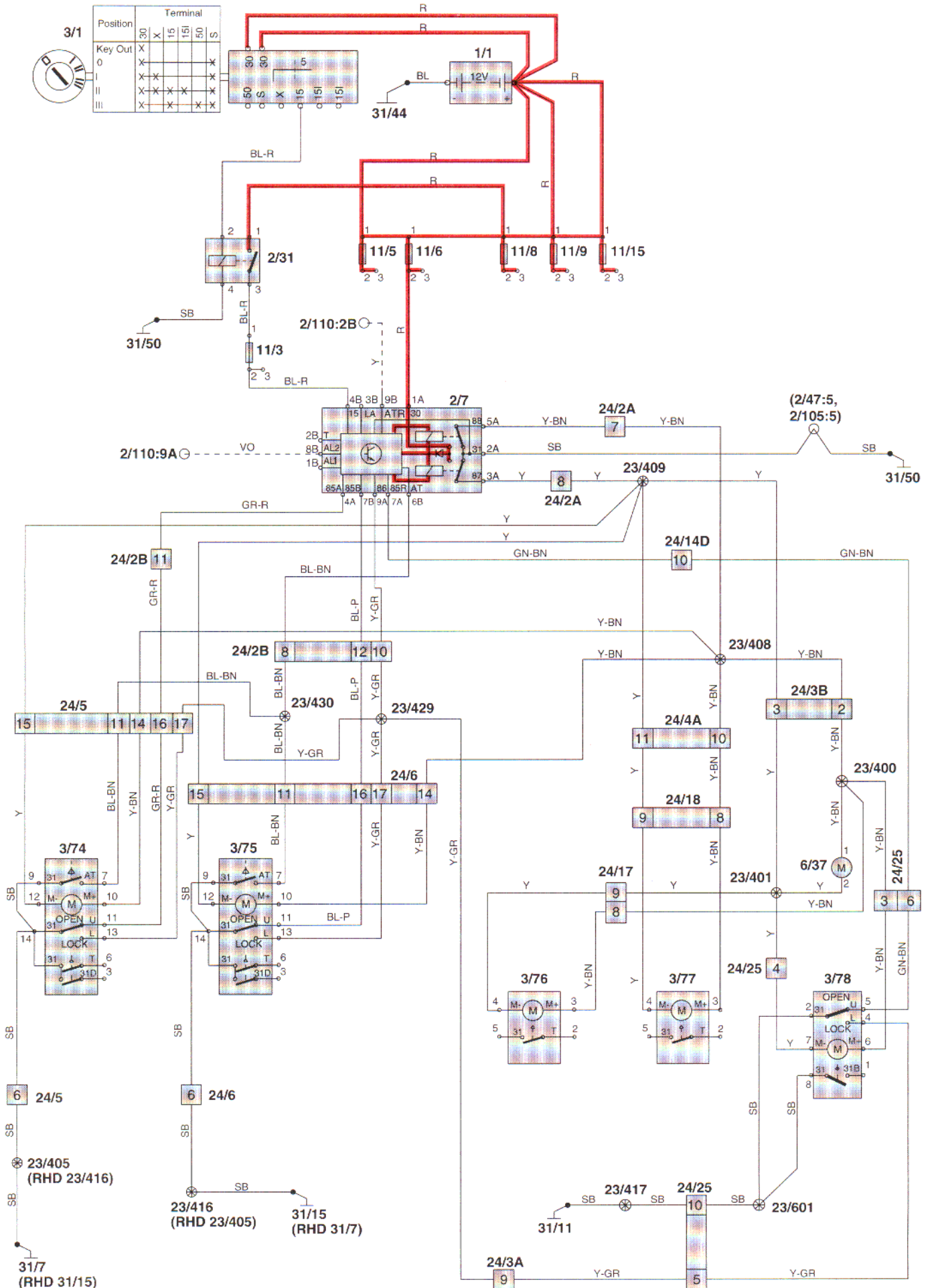




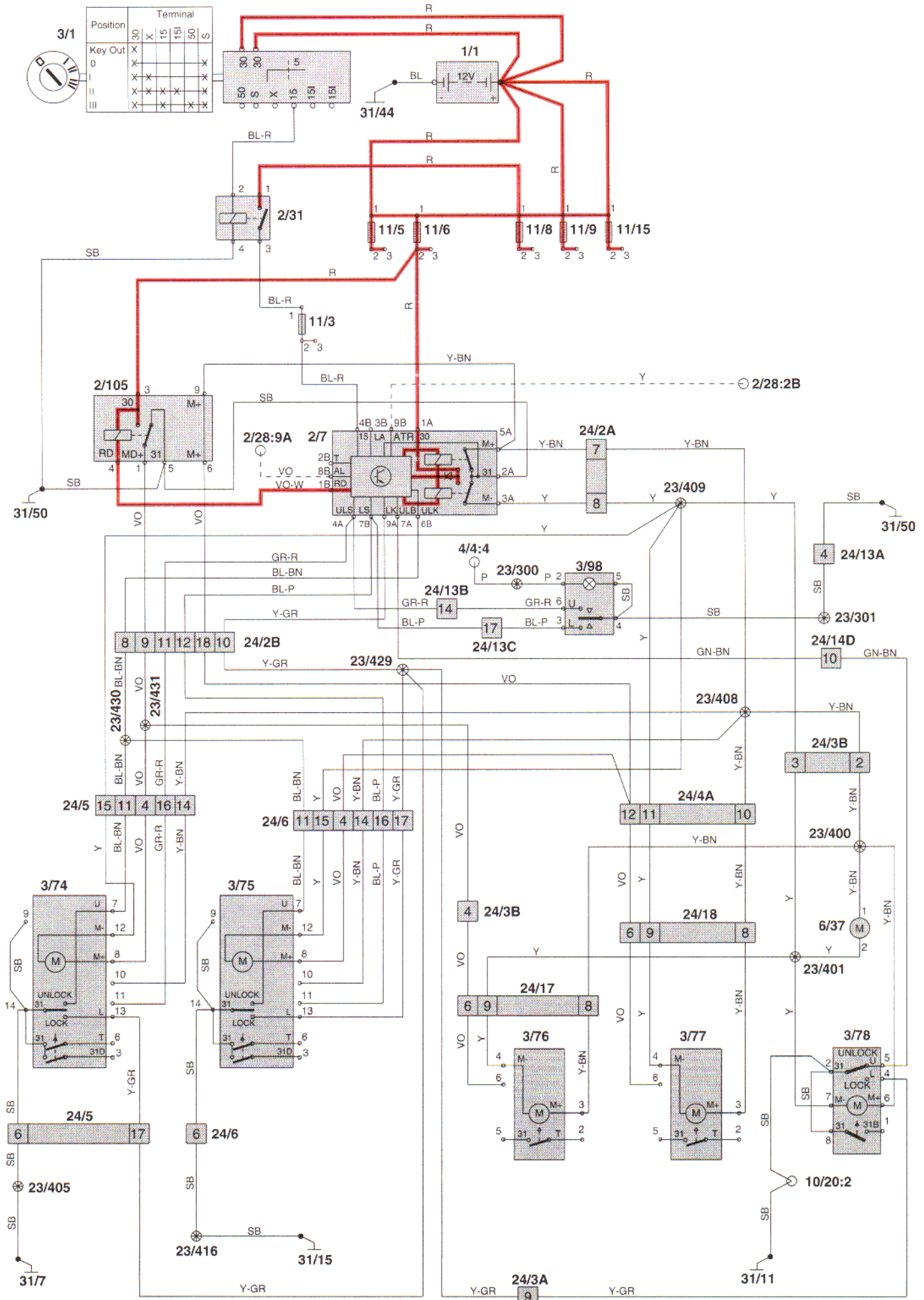
# Central locking, 4-door



# Central locking, 5-door

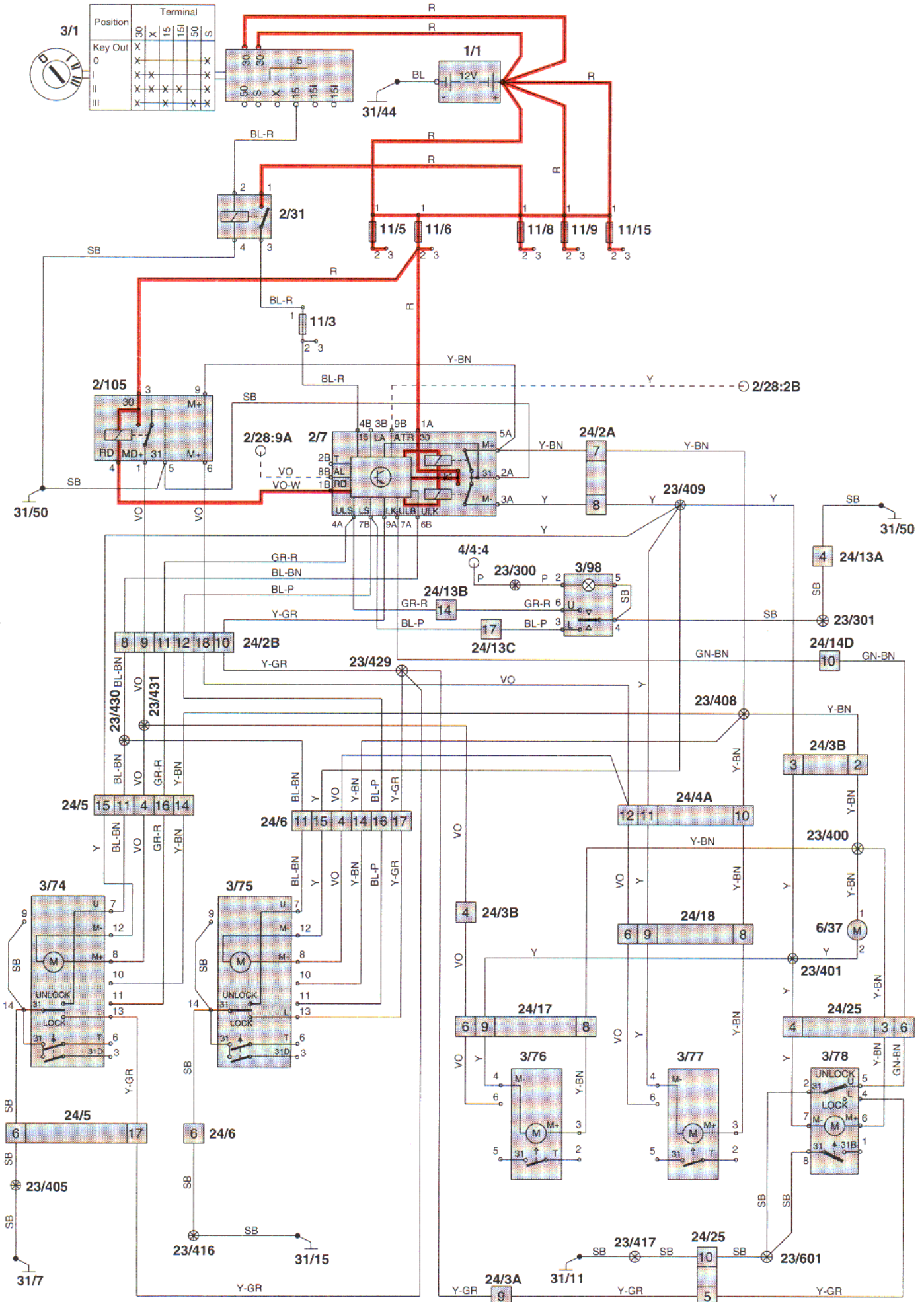


# 2-stage central locking, 4-door



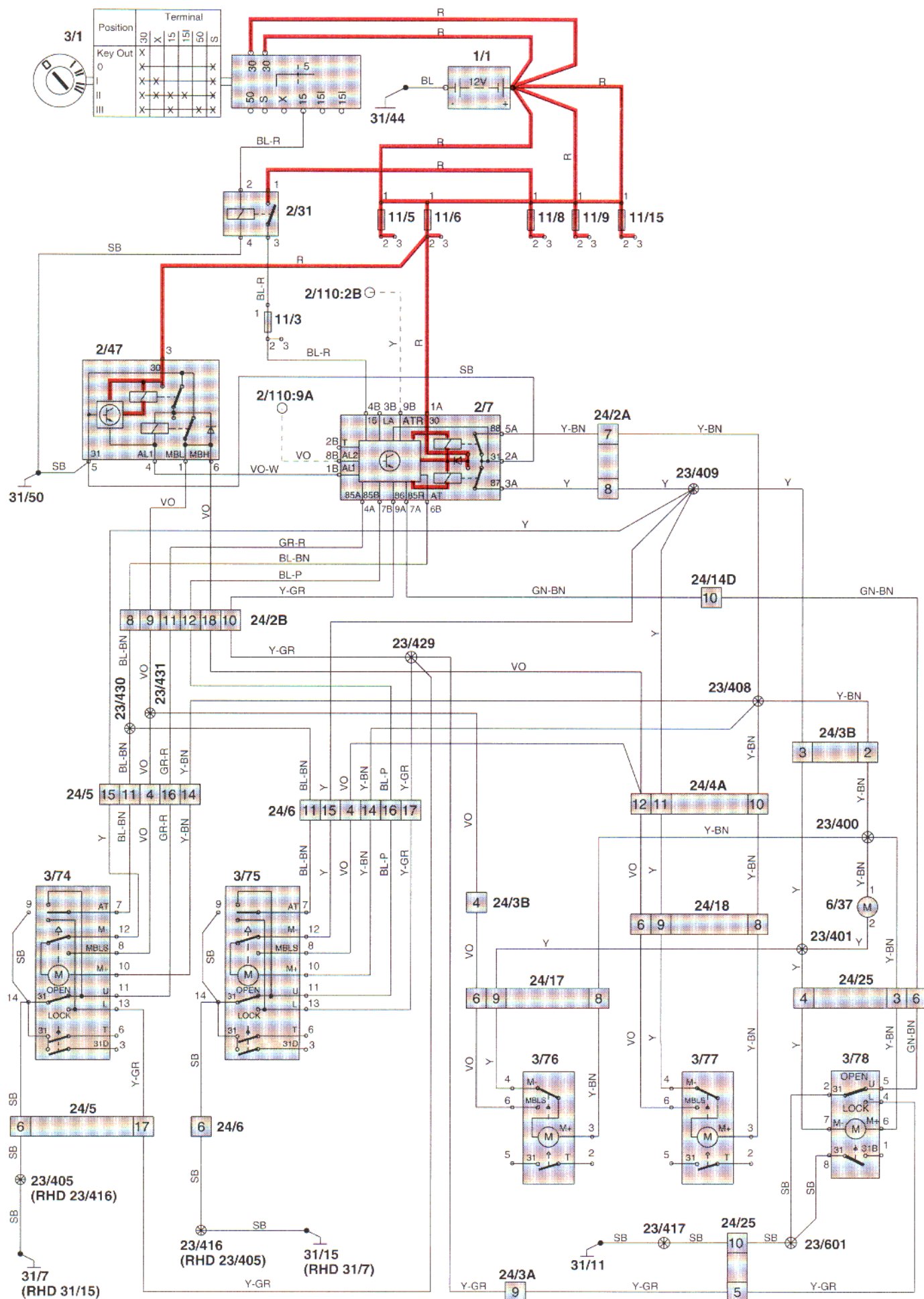


# 2-stage central locking, 5-door



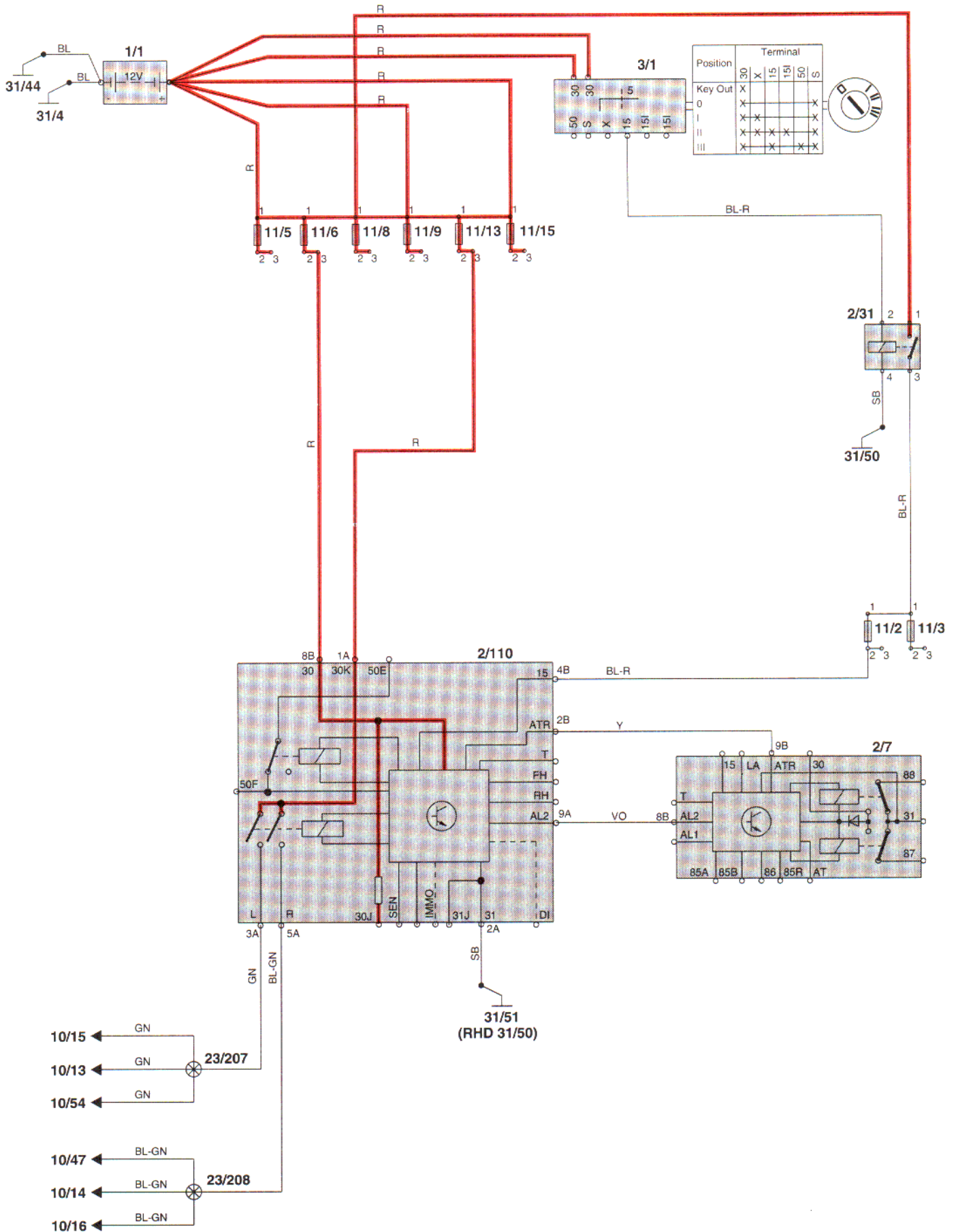


# Central locking with deadlock, 5-door





# Remote control central locking



# Component list

1/1	Battery		
2/1	Main headlight relay with bulb failure warning sensor	7/1	Bulb failure warning sensor, rear
2/5	Seat belt reminder/key warning relay	7/4	Brake fluid level sensor
2/7	Central locking/delayed inner lighting relay	7/5	Washer fluid level sensor
2/11	Engine cooling fan relay	7/6	Oil pressure sensor
2/14	Glow automatics relay	7/8	A/C pressure sensor
2/15	Relay, exhaust temperature sensor	7/12	ECC solar sensor and indication LED
2/22	A/C relay		alarm/electronic immobilizer
2/23	Fuel pump relay	7/15	Heated oxygen sensor (HO2S), front
2/28	Alarm relay	7/16	Engine coolant temperature sensor ECT+
2/30	Overload relay X+	7/17	Mass air flow (MAF) sensor/mass air flow sensor
2/31	Overload relay 15+	7/21	Camshaft position sensor (CMP)
2/32	Main relay, fuel system	7/22	Tachometer
2/47	Relay, deadlock setting	7/23	Knock sensor (KS), rear
2/53	Relay, secondary air pump	7/24	Knock sensor (KS), front
2/60	Overload relay X+	7/25	Pulse sensor
2/74	Extra heater relay	7/31	ABS sensor, front left
2/105	Driver door, 2-stage central locking relay	7/32	ABS sensor, front right
110	Remote control central locking/indication LED	7/33	Speedometer
	electronic immobilizer relay	7/39	Antenna ring
	Ignition switch	7/47	PTC resistor, pre-heater
	Light switch	7/51	Accelerator pedal sensor
	Switch, turn signal/high and low beam	7/53	Pressostat A/C
	Controls, cruise control	7/54	Throttle position (TP) sensor
	Switch, hazard lights with flasher relay	7/56	ABS sensor, rear left
	Stop (brake) light switch	7/57	ABS sensor, rear right
18	Contact, brake pedal	7/69	Outside temperature sensor, trip computer
19	Contact, clutch pedal		
17	Handbrake contact	7/71	Boost pressure sensor
14	REC / A/C switch	7/73	Coolant level sensor
15	A/C panel lights	7/74	Oil temperature sensor, automatic transmission
16	Blower fan switch		
17	Climate control	7/77	Temperature sensor, intake air
18	Switch, rear fog light	7/79	Accelerometer
11	Controls, trip computer	7/81	Pressure sensor, intake manifold
12	Alarm switch, bonnet	7/82	Heated oxygen sensor (HO2S), rear
13	Program selector, automatic transmission	7/83	High-pressure sensor A/C
11	Transmission range sensor	7/84	Tank pressure sensor
12	Kick-down switch, throttle control	7/85	EBD pressure sensor
4	Lock module, front left	7/94	Needle lift sensor
5	Lock module, front right	7/95	High Altitude sensor
6	Lock module, rear left	7/100	Tilt sensor
7	Lock module, rear right	7/101	Breaking glass sensor
8	Lock module, trunk/taillgate	7/105	Outer temperature sensor engine control module
3	Seat belt lock, left front seat		
4	Seat belt lock, right front seat	8/3	Solenoid switch A/C
5	Switch, TRACS	8/5	IAC idling valve
8	Switch, central locking	8/6-10	Injectors
	Control module, cruise control	8/17	EGR converter
	Rheostat	8/18	EVAP valve
	Safety circuit SRS	8/28	Turbo control valve
	SRS sensor unit	8/37	Solenoids, automatic transmission
0	Control module, EZK (DI) ignition system	8/43	Solenoid, aux. air intake
5	DI power stage and ignition coil	8/44	Canister valve
6	ABS control module	8/45	Solenoid, variable intake manifold
2	Electronic immobilizer	8/49	Stop solenoid
8	Control module, AW 50-42 automatic transmission	8/50	Pre-setting valve
9	Control module, left front seat	9/26-28	Extra heater
4/30	Control module, ECC	10/1	Left front light
4/34	Voltage regulator, 8 volts	10/2	Right front light
4/35	Voltage regulator, 5 volts	10/13	Left turn signal, front
4/36	Combined instrument panel microprocessor	10/14	Right turn signal, front
4/37	Control module, right front seat	10/15	Left side flasher light
4/44	DI power stage and ignition coil	10/16	Right side flasher light
4/45	Control module, LH-Jetronic 3.2 MFI	10/20	License plate lighting
4/46	Engine control module	10/22	Courtesy light
5/1	Combined instrument panel	10/24	Trunk lighting
5/2	Clock module	10/26	Reading light, rear left
5/3	Outside temperature/clock module	10/27	Reading light, rear right
5/4	Trip computer	10/29	Glove compartment lighting
6/25	Starter motor	10/30	Open-door warning lamp, front left
6/26	Generator	10/31	Open-door warning lamp, front right
6/29	Engine cooling fan	10/32	Open-door warning lamp, rear left
6/31	Fuel pump/fuel injection pump	10/33	Open-door warning lamp, rear right
6/33	Fuel level sensor	10/47	Lamp, right turn signal, rear
6/33L	Left fuel level sensor	10/48	Right back-up (reversing) light
6/33R	Right fuel level sensor	10/54	Lamp, left turn signal, rear
6/34	Power antenna	10/55	Left back-up (reversing) light
6/37	Central locking motor, tank cap	10/64	Right high beam
6/54	Secondary air pump	10/66	Right low beam
		10/68	Left high beam

# Comments

To  
VOLVO CAR CORPORATION  
Aftersales  
Dept. 57731 SAA1  
**S-405 08 GÖTEBORG**

From

.....  
.....  
.....

Telefax +46 31 59 23 53

Publication:.....  
.....

Section:..... Page..... TP No.....

Suggestion/Reason:

.....  
.....  
.....  
.....  
.....  
.....  
.....

Date.....

.....

If you have any suggestions or comments about this manual make a copy of this page, write down your comments and send to us.



# Fuses

No.	Function	Ampere
1	LH 3.2 Multiport fuel injection (MFI) EZ 129 K Distributor ignition (DI), Motronic 4.3/4.4 SFI, Fenix 5.2 Multiport fuel injection (MFI) system Main relay, Fenix 5.2 fuel system (MFI) Automatic transmission	15
2	Fuel pump, Alarm relay, Remote control central locking/indication LED relay Electronic Immobilizer	15
3	Exhaust temp. sensor (Japan), Interior lighting	10
4	Electronic Immobilizer	10
5	Blower fan, speed 4	30
6	Central locking, Deadlock locking relay, Alarm relay, Remote control central Electronic Immobilizer Driver door, 2-stage central locking relay	25
7	Radio	15
8	Electronic Immobilizer	10
9	ABS Anti-lock braking system	30
10	Heated rear seat	15
11	Heated rear window, Heated door mirrors	30
12	Stop (brake) lights	10
13	Turn signal/hazard lights, High beam flasher, Alarm relay, Remote control central locking/(indication LED electronic immobilizer)	15
14	ABS relay	30
15	Interior lighting, Glove compartment lighting, Entry lighting, Open-door warning lights, Trunk lighting, Seat belt reminder, Data link connector (DLC), Tilt sensor	10
16	Power antenna, CD changer, (Trailer socket), (Accessories)	30
17	Key warning, USA, Canada, Korea, Australia	10
18	Front fog lights	15
19	High beam, left	15
20	High beam, right, High beam warning (Accessories)	15
21	Low beam, left	15
21	Low beam, right	15
23	Parking lights, License plate light	10
24	Parking lights, Bulb failure warning sensor	10
25	Rear fog lights, rear fog light warning	10
26	Heated front seats, Power door mirrors	25
27	Back-up (reversing) lights, Turn signal	15
28	<b>+15l-rail (15/4):</b> Heated rear window, Heated door mirrors, Seat belt reminder, Cruise control, Bulb failure warning sensor Germany, Shift-lock automatic transmission, Heated rear seat	10
29	ABS Anti-lock braking system	15
30	Cigarette lighter	10
31	Blower fan, speeds 1-3, Climate unit, Recirculation	25
32	Radio	10
33	<b>+X-rail (15/8):</b> Beam length control, Tailgate wash/wipe	15
34	Windshield wiper/washer, Horn, Headlight wiper/washer	25
35	Instrument and control lighting, Cigar lighter lighting, Ashtray lighting, Rheostat, Power sunroof, (Accessories)	10
36	Alarm siren	10
<b>Automatic fuses</b>		
37	Power windows, Power sunroof	
38	Spare	
39	Power seat, left	
40	Power seat, right	

## Fuses, 11/1-40, in central electrical unit

No.	Function	Ampere
1	Engine control module	15
2	Alarm relay, Remote control central locking/indication LED electronic immobilizer	15
3	Interior lighting	10
4	Electronic Immobilizer	10
5	Blower fan, speed 4	30
6	Central locking, Deadlock locking relay, Alarm relay, Remote control central locking/indication LED electronic immobilizer	25
7	Radio	15
8	Electronic Immobilizer	10
9	-	
10	Heated rear seat	15
11	Heated rear window, Heated door mirrors	30
12	Stop (brake) lights	10
13	Turn signal/hazard lights, High beam flasher, Alarm relay, Remote control central locking/indication LED electronic immobilizer	15
14	-	
15	Interior lighting, Glove compartment lighting, Entry lighting, Open-door warning lights, Trunk lighting, Seat belt reminder, Data link connector (DLC), Tilt sensor	10
16	Power antenna, CD changer, (Trailer socket), (Accessories)	30
17	-	
18	Front fog lights	15
19	High beam, left	15
20	High beam, right, High beam warning (Accessories)	15
21	Low beam, left	15
21	Low beam, right	15
23	Parking lights, License plate light	10
24	Parking lights, Bulb failure warning sensor	10
25	Rear fog lights, rear fog light warning	10
26	Heated front seats, Power door mirrors	25
27	Back-up (reversing) lights, Turn signal	15
28	<b>+15I-rail (15/4):</b> Heated rear window, Heated door mirrors, Seat belt reminder, Cruise control, Bulb failure warning sensor Germany, Heated rear seat	10
29	ABS Anti-lock braking system	15
30	Cigarette lighter	10
31	Blower fan, speeds 1-3, Climate unit, Recirculation	25
32	Radio	10
33	<b>+X-rail (15/8):</b> Beam length control, Tailgate wash/wipe	15
34	Windshield wiper/washer, Horn, Headlight wiper/washer	25
35	Instrument and control lighting, Cigar lighter lighting, Ashtray lighting, Rheostat, Power sunroof, (Accessories)	10
36	Alarm siren	10
<b>Automatic fuses</b>		
37	Power windows, Power sunroof	
38	Spare	
39	Power seat, left	
40	Power seat, right	

# Fuses, Diesel

## Fuses, 11A, in relay/fuse box in engine compartment

No.	Function	Ampere
11A/1	Engine cooling fan relay	60
11A/2	-	
11A/3	Extra heater relay	50
11A/4	ABS control module	50
11A/5	Main headlight relay with bulb failure warning sensor	50
11A/6	-	
11A/7	-	
11A/8	Fuse 11B/1 Fuses 11B/2, 11B/3 and 11B/4, via main relay fuel injection system	60
11A/9	Glow plugs 1-5, via glow automatic relay	80

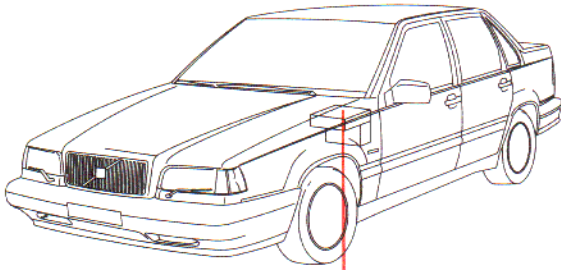
## Fuses, 11B, in relay/fuse box in engine compartment

No.	Function	Ampere
11B/1	Automatic transmission	10
11B/2	Engine control module Fuel injection pump Pre-setting valve	10
11B/3	Glow automatics relay Extra heater relay Turbo control valve EGR converter PTC resistor, pre-heater	15
11B/4	Automatic transmission	10
11B/5	-	

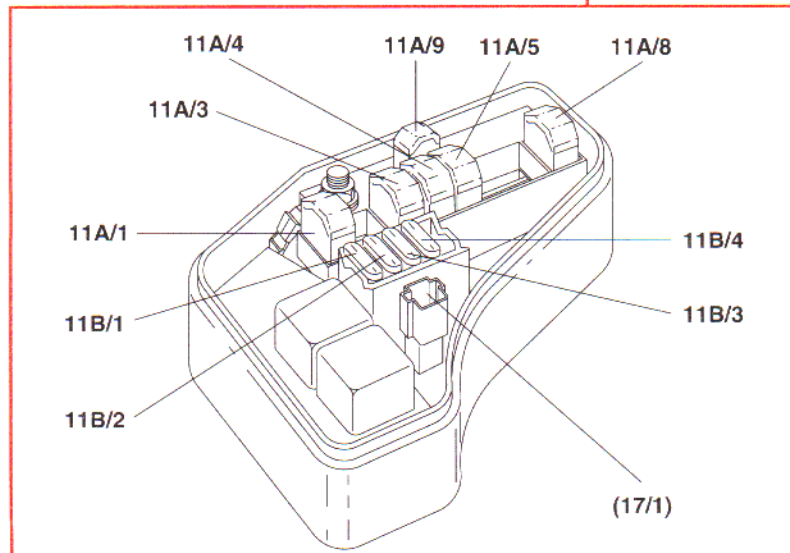
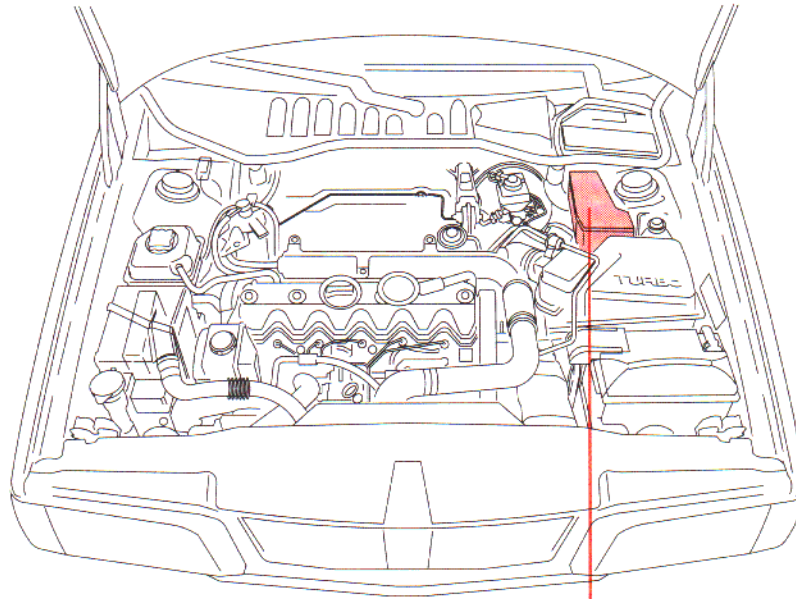
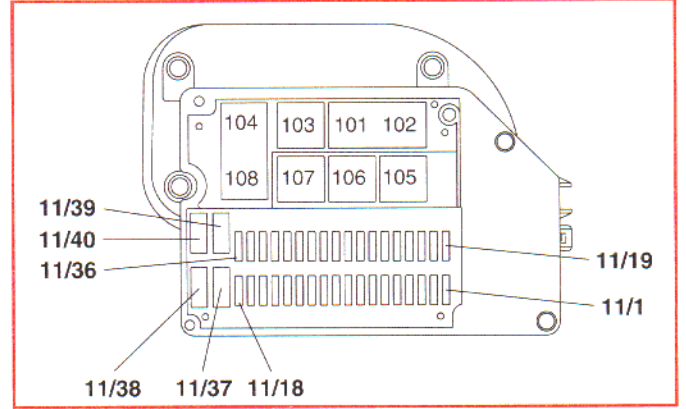
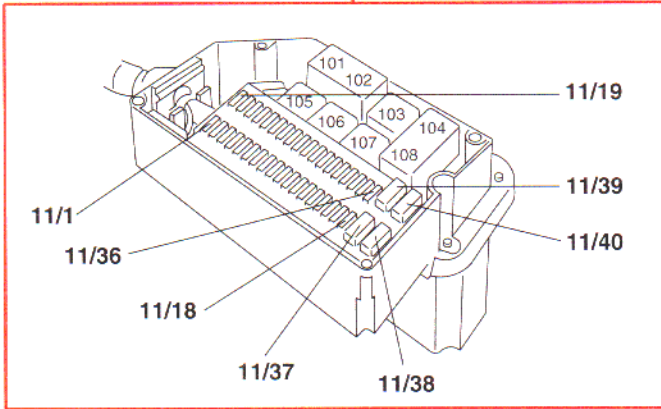
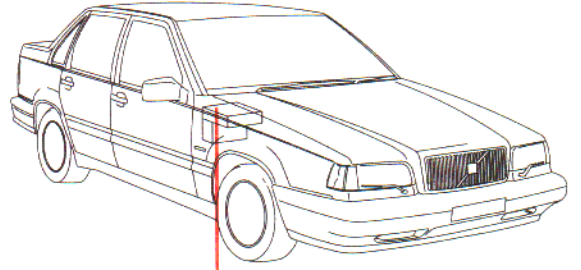


# Fuses, Diesel

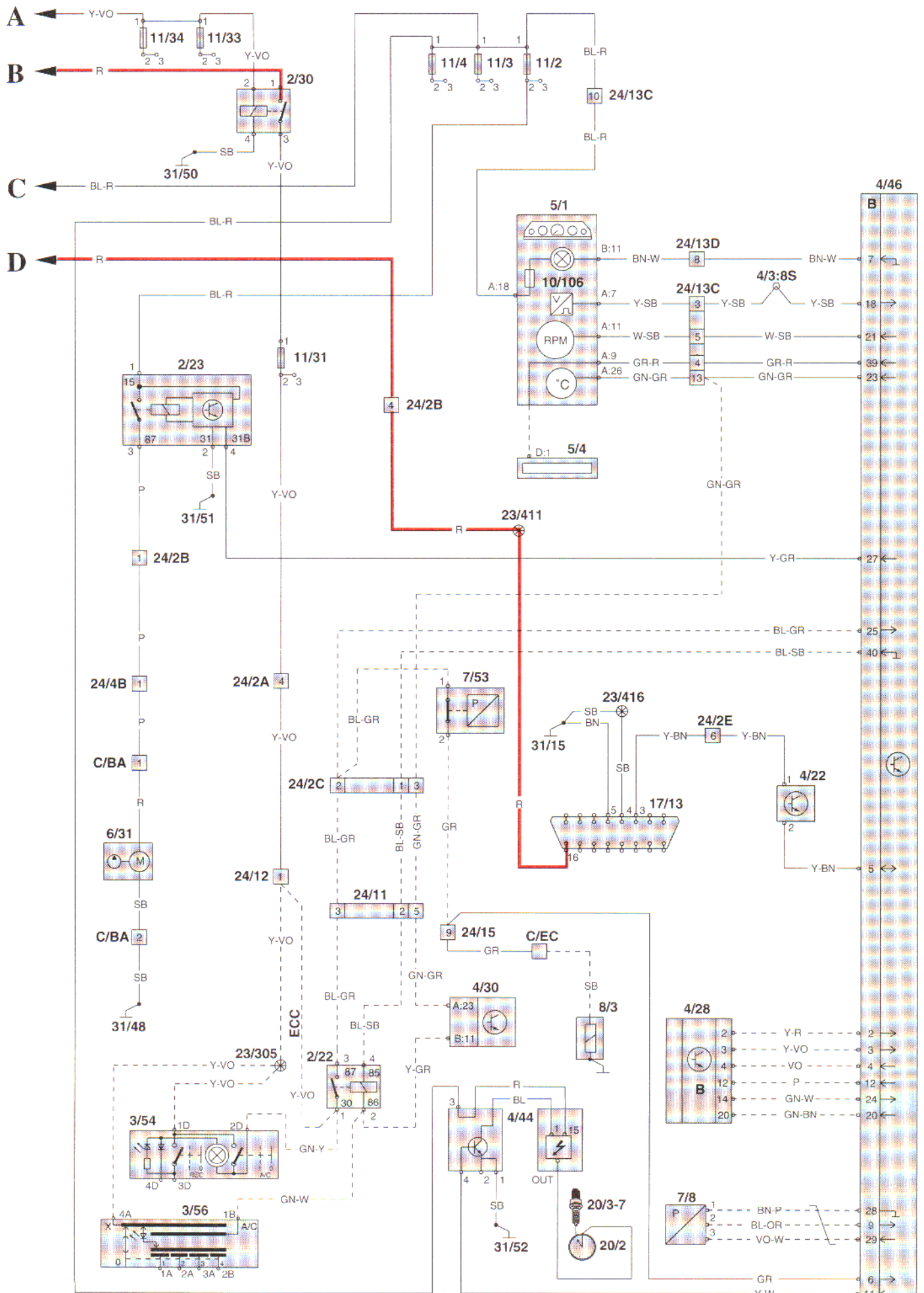
LHD



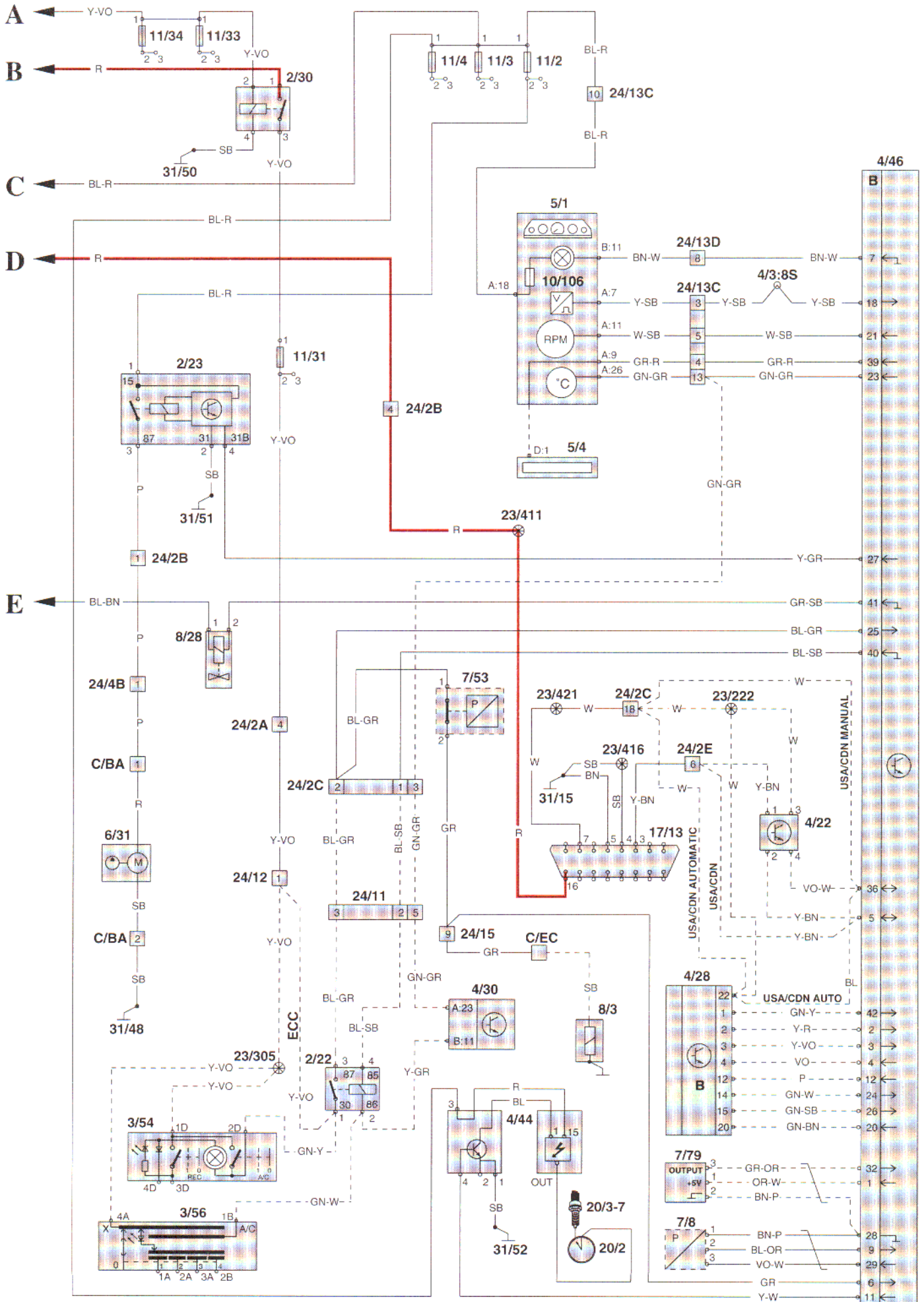
RHD



# Multiport fuel injection (MFI) system, Fenix 5,2

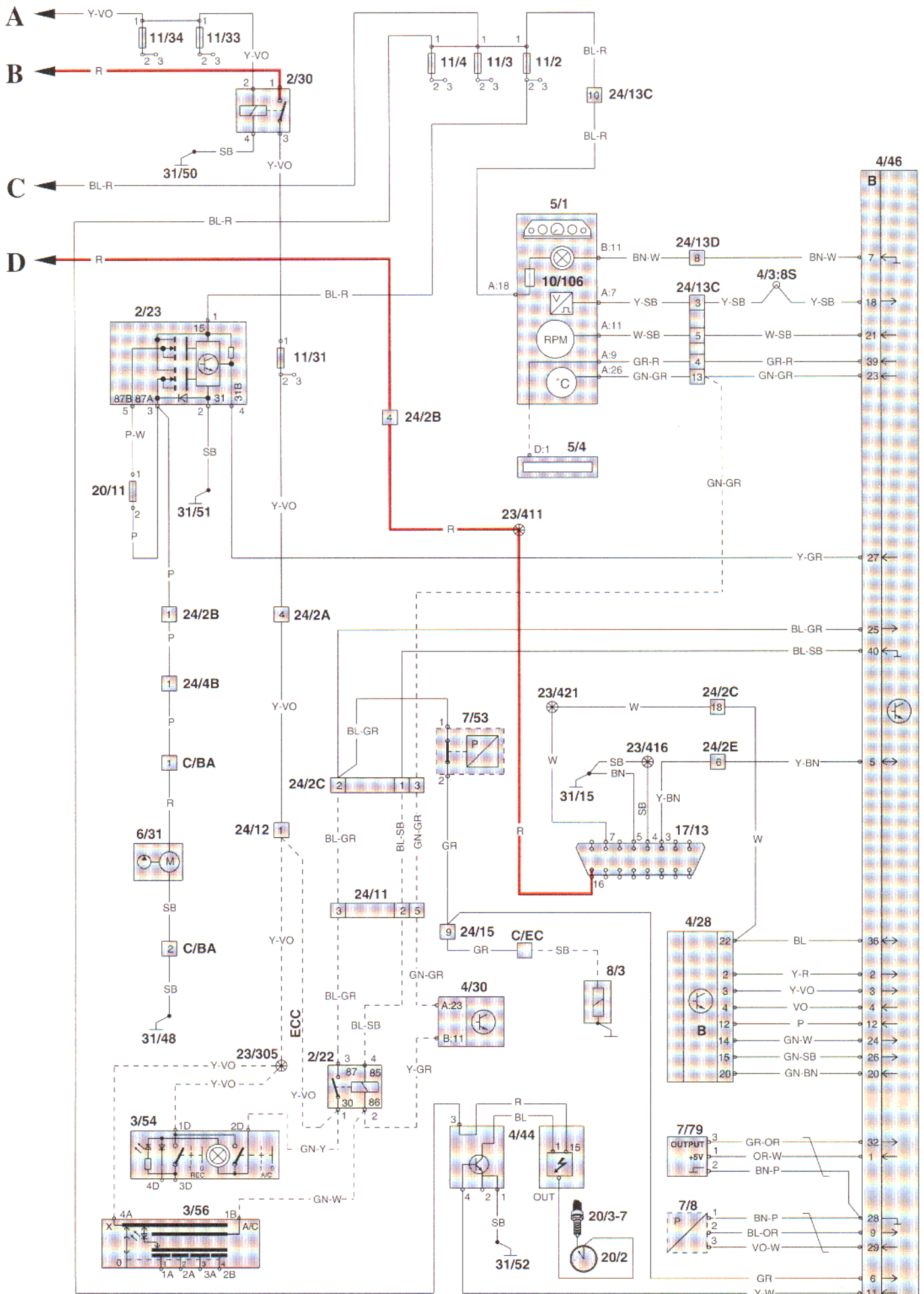


# Sequential fuel injection (SFI) system Motronic 4.3 (B 5204 T, B 5234 T)

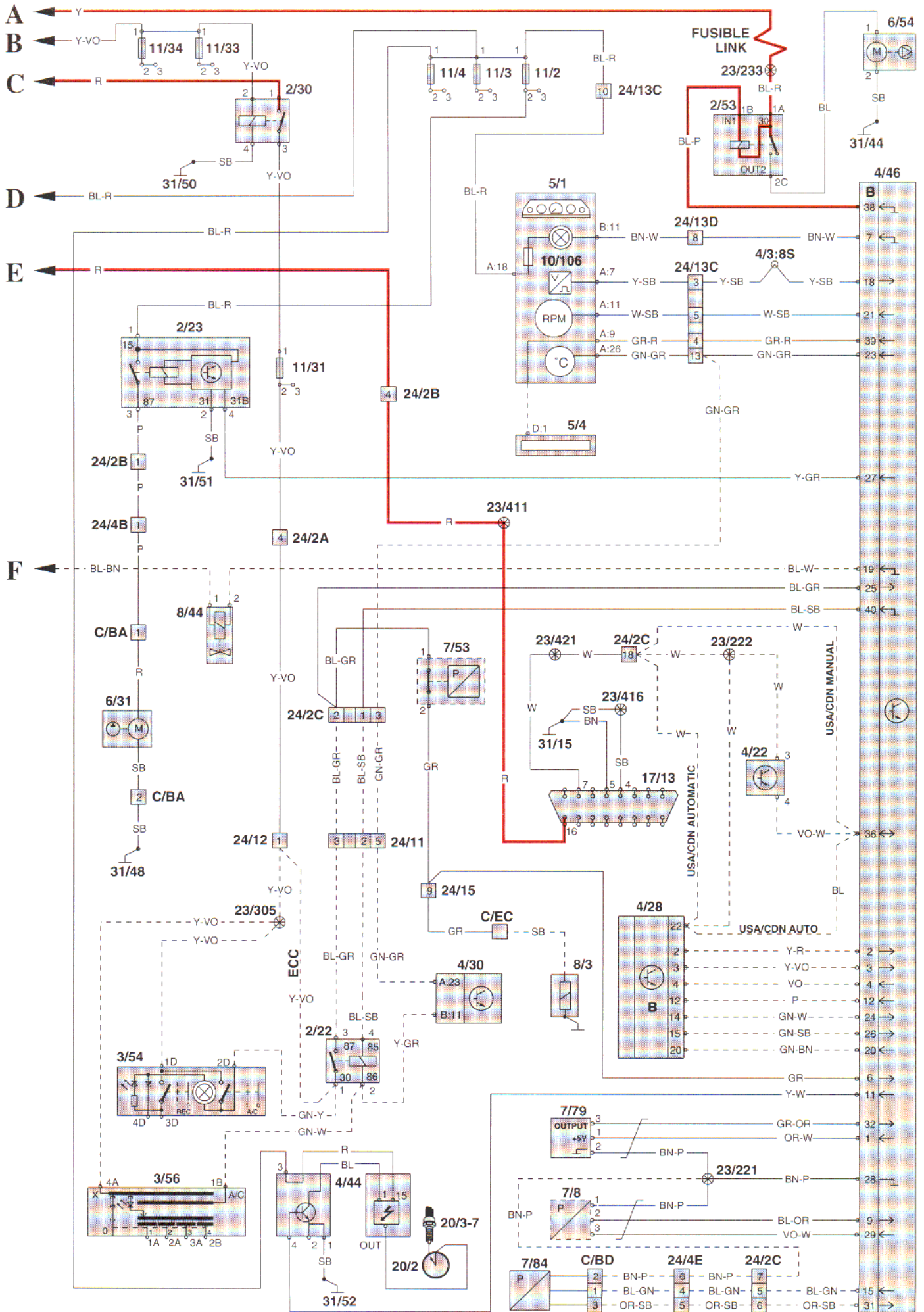




# Sequential fuel injection (SFI) system, Motronic 4.3 (B 5254 S)

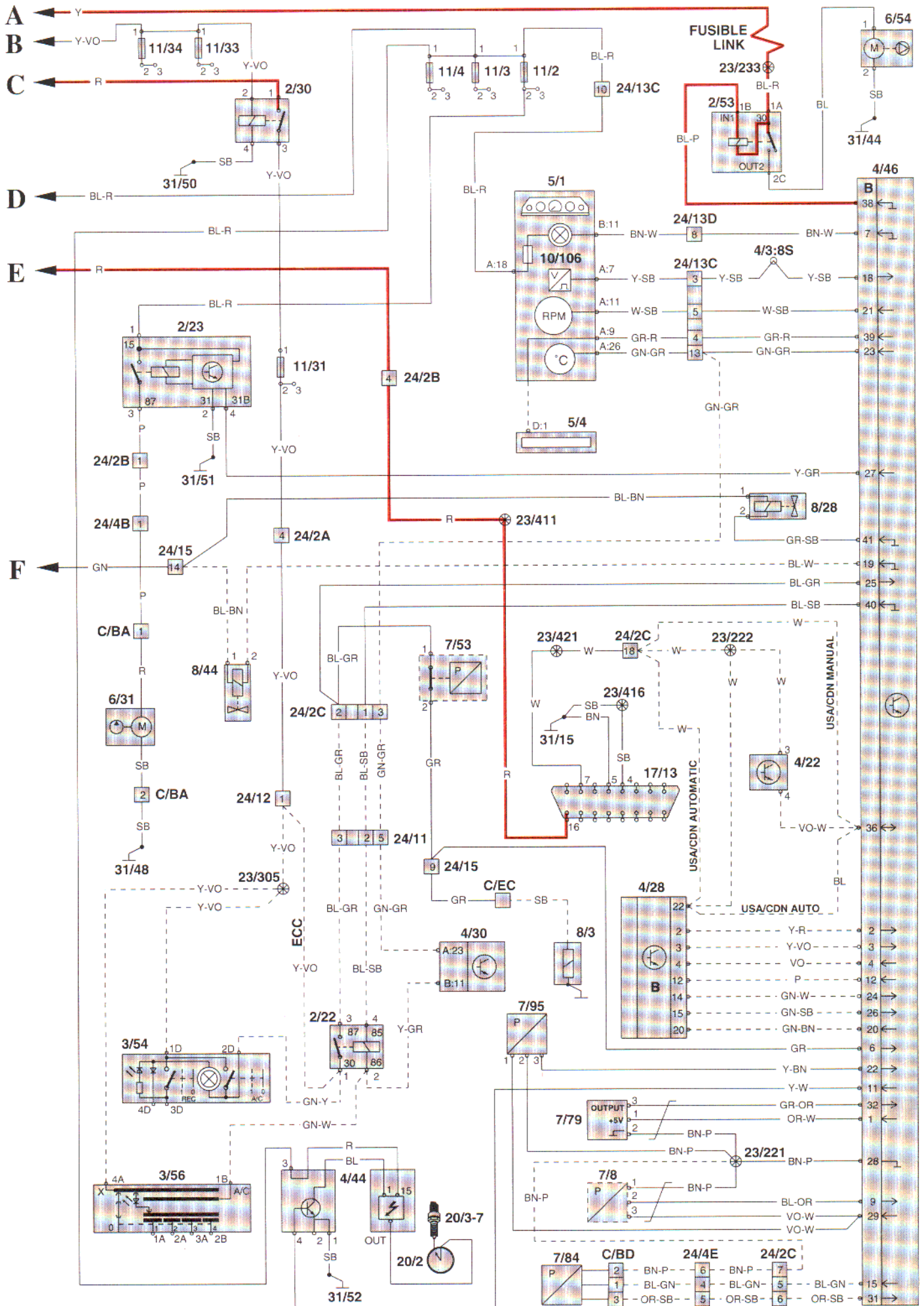


# Sequential fuel injection (SFI) system, Motronic 4.4 (B 5254 S)





# Sequential fuel injection (SFI) system, 4.4 (B 5254 T)





# Engine management system MSA 15.7

