

**VOLVO**  
for life



# VOLVO **WIRING DIAGRAM**

S60/S60R/S80  
V70/V70R/XC70/XC90

TP 3985202

## 2005 SUPPLEMENT

## Vehicles with SRS (Airbag)/SIPS bag/IC (Inflatable curtain)

### Warning!

Extra caution must be exercised when working on vehicles equipped with SRS/SIPS bag/IC in order to avoid:

1. Personal injuries when performing repair work.
2. Damage or malfunction of the SRS/SIPS bag/IC system.

Work involving the SRS/SIPS bag/IC systems or other components in the vehicle that may affect the SRS/SIPS bag/IC systems must always be performed by an authorized Volvo workshop.

In case of doubt, consult the SRS and SIPS bag/IC service manual.

### Is the vehicle equipped with SRS/SIPS bag/IC?

Vehicles with SRS are most easily recognized by the letters SRS in the center of the steering wheel. If the vehicle also has a passenger side airbag, the letters SRS are stamped on the dashboard above the glove compartment. SRS vehicles from 1993 and onward also have explosive seat belt tensioners. SIPS bags are only installed on SRS vehicles from 1995 and onward. SIPS bag decals are located on the windshield and seat compartment. Vehicles with IC can be recognized by the letters IC on the C/D panel (4 door) or the B panel (5 door).

### General recommendations

- Be especially careful when working on or around SRS, SIPS, and IC components.
- Make sure that no wires are pinched, frayed, or pierced.
- Never fit accessories by the sensors.
- Where applicable, work on the steering wheel, steering shaft, or steering gear must be done in accordance with the methods in the SRS section of VADIS.
- Certain components of the aforementioned systems must be grounded while working. Read the appropriate sections in VADIS.
- Do not install any accessories in the areas between the A and B-pillars, the B and C-pillars, and the C and D-pillars.

### Test terminal

Fuse in cargo compartment auxiliary fuse box.

### Modifications introduced up to August 2004

Any changes made to the vehicle after this date are not included in the manual. If necessary, refer to service bulletins.

Volvo models are sold in versions adapted for different markets. These adaptations depend on factors such as legal requirements, taxation, and market demands.

This manual may therefore include illustrations and text that do not apply to the vehicles in your country.

### Order number TP 3985202

This publication contains updated information for model year 2005 late edition. For other electrical systems, see publication TP 3977202, which is found in Electronic Wiring Diagram (EWD) TP 3983003 or later.

We retain the right to make modifications.

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# Explanations

## Abbreviations

### Groups

|          |                                     |
|----------|-------------------------------------|
| Group 23 | = Fuel system                       |
| Group 26 | = Cooling system                    |
| Group 27 | = Engine controls                   |
| Group 32 | = Generator and voltage regulator   |
| Group 33 | = Starting system                   |
| Group 35 | = Lighting                          |
| Group 36 | = Additional electrical equipment   |
| Group 37 | = Wiring and fuses                  |
| Group 38 | = Instruments                       |
| Group 39 | = Other                             |
| Group 43 | = Transmission                      |
| Group 59 | = Brake system                      |
| Group 64 | = Steering                          |
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| Group 83 | = Doors and openings                |
| Group 84 | = Exterior decorative elements etc. |
| Group 85 | = Interior equipment                |
| Group 87 | = Climate controls                  |
| Group 88 | = Internal equipment                |

### Ignition switch symbols

|     |   |
|-----|---|
| X   | = Accessories (audio position)              |
| S   | = Powered upon insertion of key             |
| 15  | = The switch remains connected during start |
| 15I | = Contact is broken while starting          |
| 30  | = Constant power from the battery           |
| 50  | = Start                                     |

### Countries/Markets

|       |                                  |
|-------|----------------------------------|
| A     | = Austria                        |
| AUS   | = Australia                      |
| B     | = Belgium                        |
| CDN   | = Canada                         |
| CH    | = Switzerland                    |
| D     | = Germany                        |
| DK    | = Denmark                        |
| E     | = Spain                          |
| EU/OS | = Markets outside USA and Canada |
| FIN   | = Finland                        |
| GB    | = Great Britain                  |
| ISR   | = Israel                         |
| J     | = Japan                          |
| KOR   | = Korea                          |
| N     | = Norway                         |
| NL    | = Netherlands                    |
| S     | = Sweden                         |
| USA   | = United States of America       |
| WEU   | = Western Europe                 |

### Other

|         |                                      |
|---------|--------------------------------------|
| ACC     | = Accessory                          |
| AMP     | = Amplifier                          |
| AUDIO   | = Audio system                       |
| AUTO    | = Automatic transmission             |
| Bi-X    | = Bi-Xenon                           |
| BLIS    | = Blind spot information system      |
| CEM     | = Central Electronic Module          |
| DRL     | = Daytime Running Lights             |
| DSTC    | = Dynamic Stability Traction Control |
| ECC     | = Electronic climate control system  |
| ECPS    | = Electronic power steering          |
| EXC     | = Exclusive                          |
| EXT. D  | = Extended electrical distribution   |
| HISPEED | = High speed data bus                |
| LH      | = Left-hand side                     |
| LHD     | = Left-hand drive                    |
| LOSPEED | = Low speed data bus                 |
| MAN     | = Manual transmission                |
| OPN     | = Option (factory-installed)         |
| PCL     | = Power Child Lock                   |
| PETROL  | = Gasoline                           |
| REM     | = Rear Electronic Module             |
| RH      | = Right-hand side                    |
| RHD     | = Right-hand drive                   |
| RTI     | = Road Traffic Information           |
| SRS     | = Airbag                             |
| SUBWOOF | = Bass speaker                       |
| SULEV   | = Super Ultra Low Emission Vehicle   |
| SUM     | = Suspension Module (SUM)            |
| T       | = Turbo engine                       |
| ULEV    | = Ultra Low Emission Vehicle         |
| W/O     | = Without                            |
| 5CYL    | = 5-cylinder engine                  |
| 6CYL    | = 6-cylinder engine                  |
| 8CYL    | = 8-cylinder engine                  |

### Colors

|     |               |
|-----|---------------|
| BL  | = Blue        |
| BN  | = Brown       |
| GN  | = Green       |
| GR  | = Gray        |
| LBL | = Light Blue  |
| LGN | = Light Green |
| OR  | = Orange      |
| P   | = Pink        |
| R   | = Red         |
| SB  | = Black       |
| VO  | = Violet      |
| W   | = White       |
| Y   | = Yellow      |

# How to use the wiring diagrams 1:2

**The descriptions below apply in general to all wiring diagram manuals, although not all sections are necessarily contained in this manual.**

## A. Component designation

Every component has a component designation that consists of two parts.

The first part is a type number that describes the type of component in question, for example 3/xx.

The second part of the designation is a serial number, e.g. x/2.

Combined these give a component designation, for example 3/2.

At the end of the manual is a list of components, where, with the help of the component designation, you can read off the name of the component, for example, 3/2 = light switch.

## List of type numbers

The list shows which type of component that respective type numbers refer to, for example, 3/x = switch, 6/x = electric motor, etc.

|    |                                  |
|----|----------------------------------|
| 1  | Battery                          |
| 2  | Relay                            |
| 3  | Switch                           |
| 4  | Control module                   |
| 5  | Driver Information Module        |
| 6  | Electric motor                   |
| 7  | Sensor                           |
| 8  | Actuator                         |
| 9  | Heating element                  |
| 10 | Light                            |
| 11 | Fuse                             |
| 15 | Electrical distribution rail/box |
| 16 | Audio                            |
| 17 | Service/diagnostics              |
| 18 | Contact reel                     |
| 19 | Meter                            |
| 20 | Ignition component/shunt         |
| 26 | Converter                        |
| 27 | Optics                           |
| 31 | Ground connection                |
| 53 | Junction point                   |
| 54 | Connector                        |

## B. Junction points

The wiring diagrams contain numbered junction points, e.g. 53/352.

This manual contains a section with a list of junction points. This list shows all the components which are connected to each junction point.

The location of the junction points is shown in the "Cable harness routing in vehicle" section.

## C. Connectors

Connectors provide a bridge between two cable harnesses and are described in the "Connectors" section.

## D. Electrical distribution

Operation of the fuses and relays is shown in the "Electrical distribution" section.

## E. Data communication

Today's cars are equipped with CAN, LIN & MOST networks that transmit information. Connections to these networks are shown in their entirety on the respective wiring diagram. Complete information on Data communication can be found in the section entitled "Control modules".

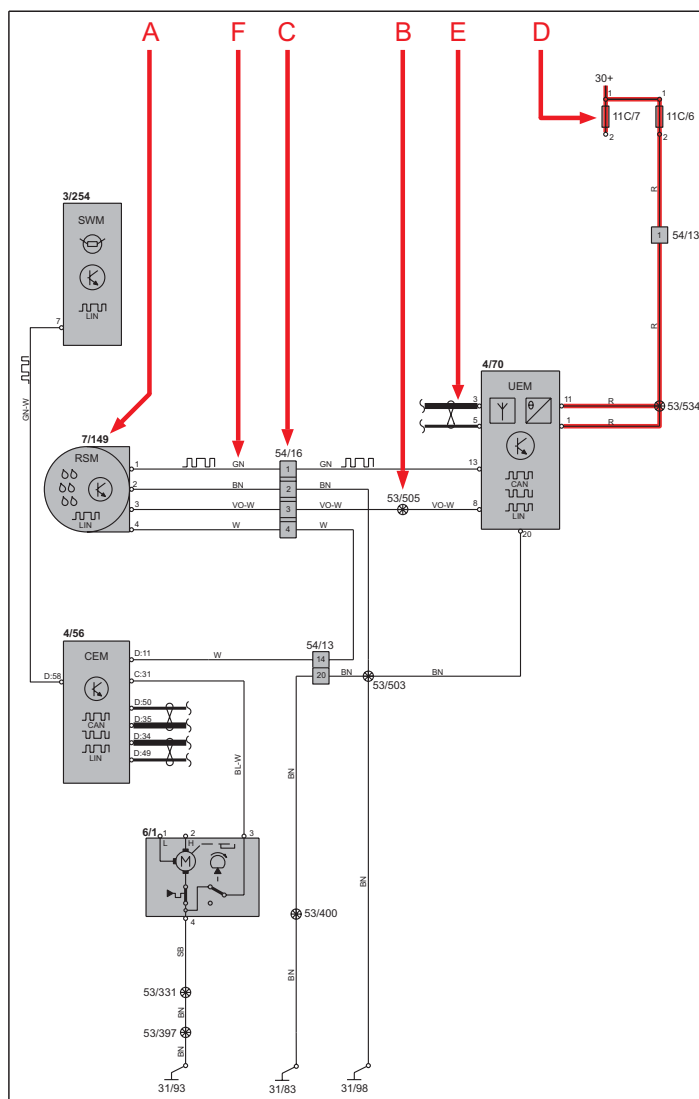
## F. Abbreviations

A number of different abbreviations are used in the manual. These are explained in the section "Abbreviations".



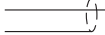


















## G. Component location

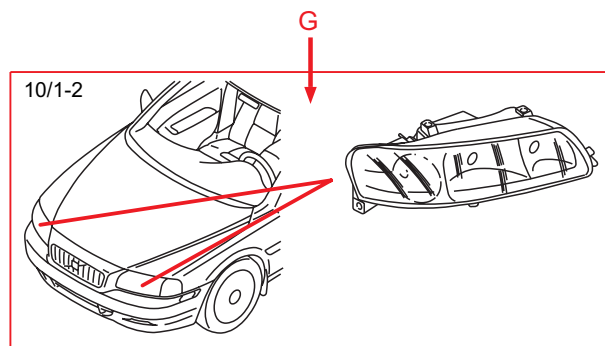
There is a section at the end of the manual in which the appearance and location of components is described in numerical order.

## How to use the wiring diagrams 2:2

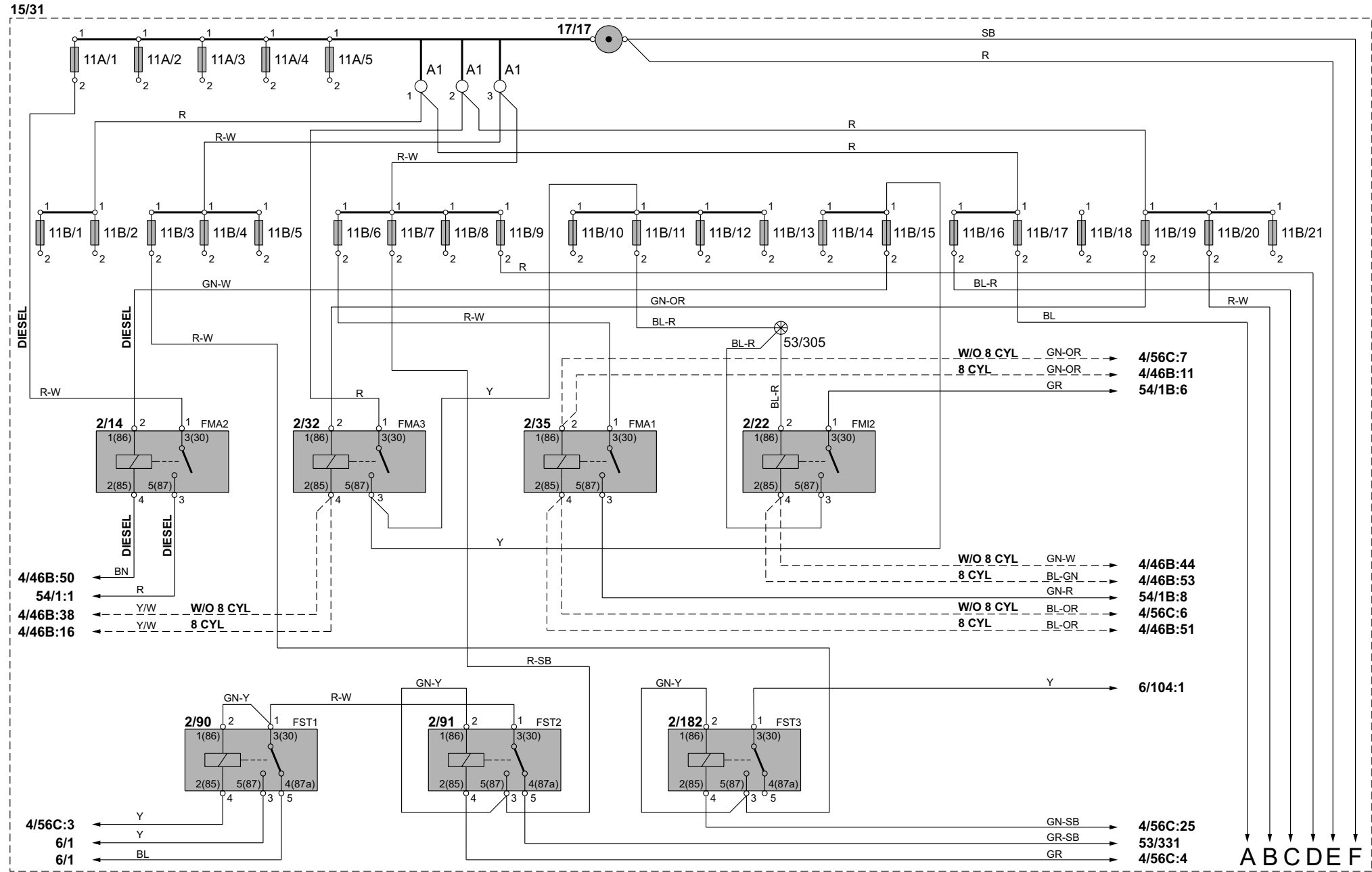


### List of symbols

- = System voltage
-  = Ground connection via wiring
-  = Ground connection in component/chassis
-  = Screened wire
-  = Junction point
-  = Twisted cable
-  = Electrical connection
-  = Variant
-  = CAN communication
-  = CAN high data signal (CAN H)
-  = CAN low data signal (CAN L)
-  = LIN communication
-  = LIN communication
-  = DIN cable, coaxial cable, etc.
-  = Data communication
-  = CAN communication
-  = MOST communication
-  = MOST communication
-  = Connection with distribution box
-  = Further connection to...
-  = Connector between cable harnesses
-  = Connector connected in component

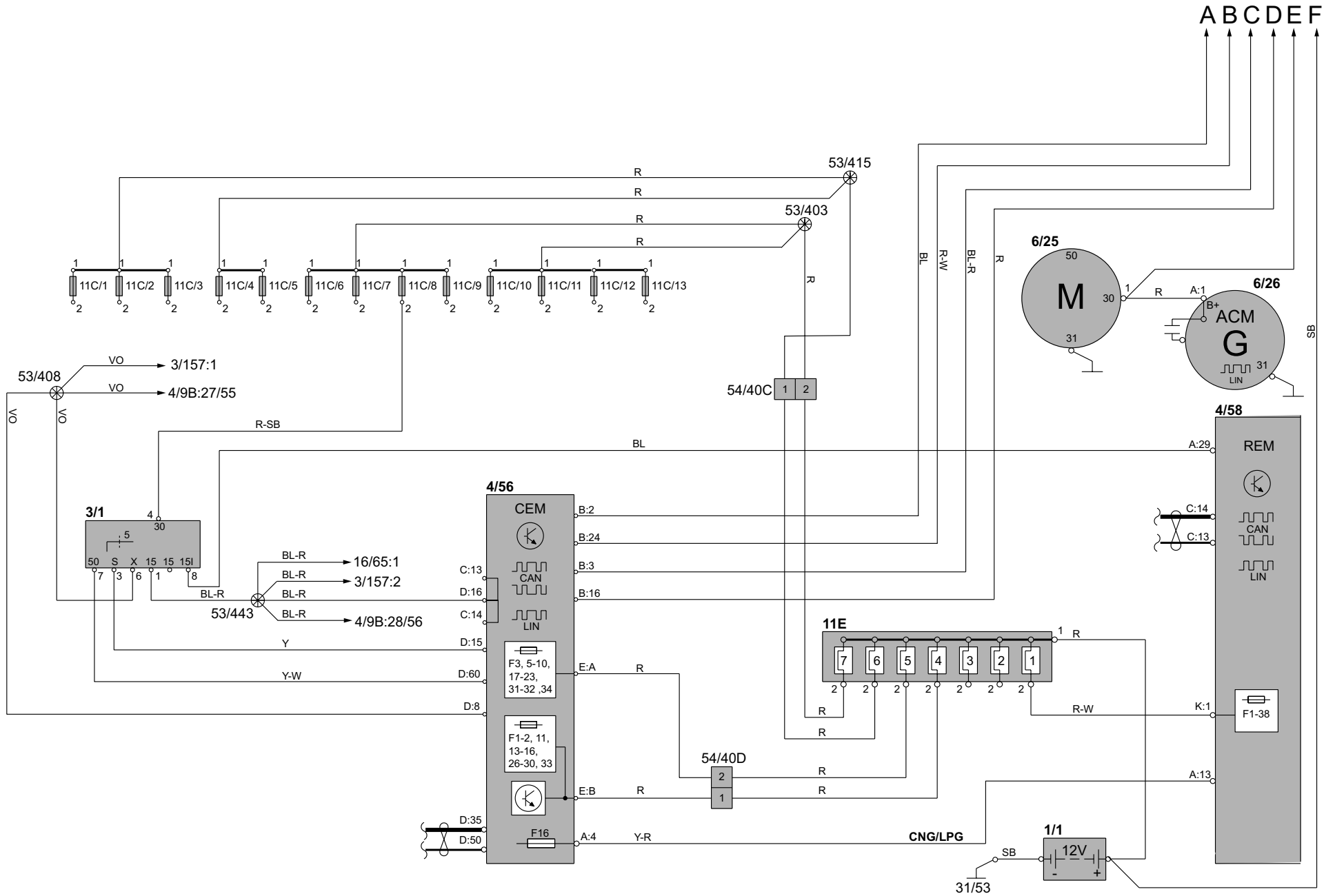


Electrical distribution 1:2 XC90  
Overview



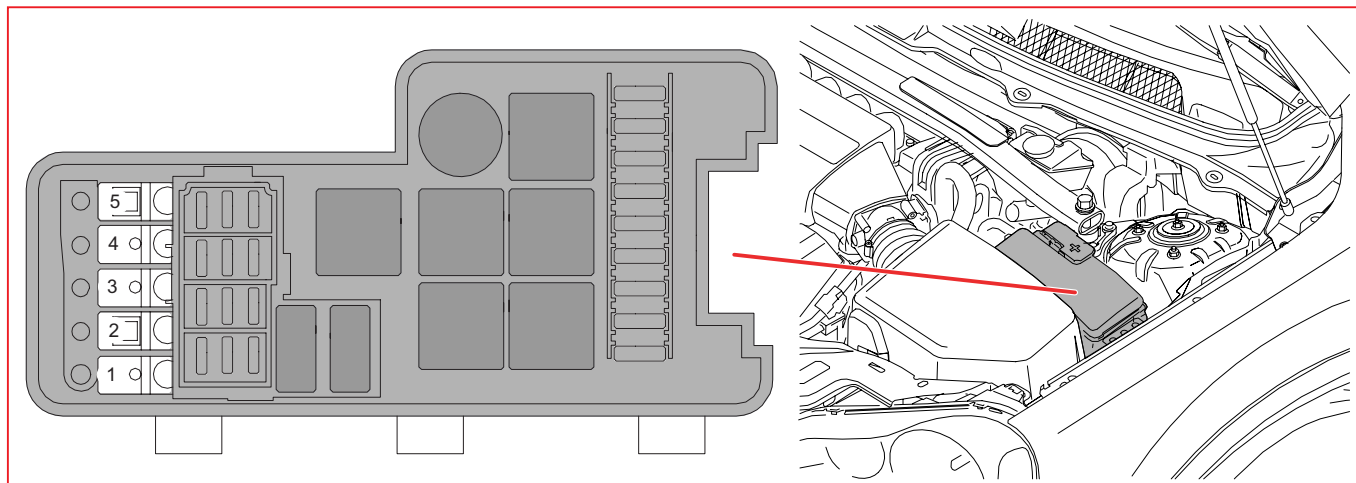


## Electrical distribution 2:2 XC90 Overview



## Fuses

### Engine compartment 11A/1-5

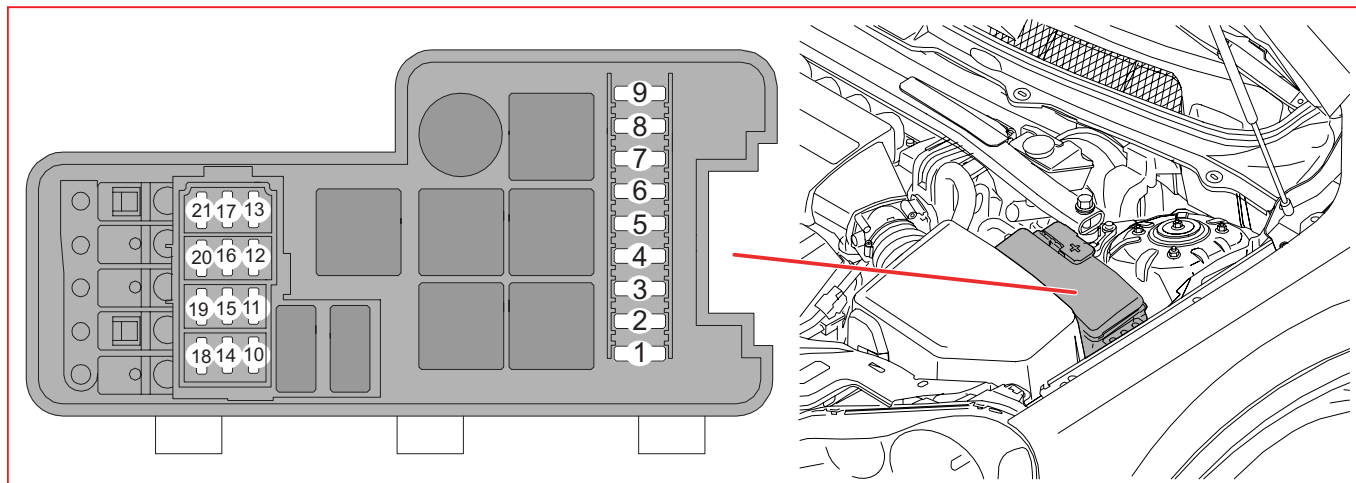


### 11A Fuses in engine compartment XC90

| No. | Fuse function           | via  | A  |
|-----|-------------------------|------|----|
| 1   | 20/22-26 Glow plug      | 2/14 | 60 |
| 2   | 6/29 Motor, cooling fan | 4/71 | 60 |
| 3   | -                       | -    | -  |
| 4   | -                       | -    | -  |
| 5   | -                       | -    | -  |

# Fuses

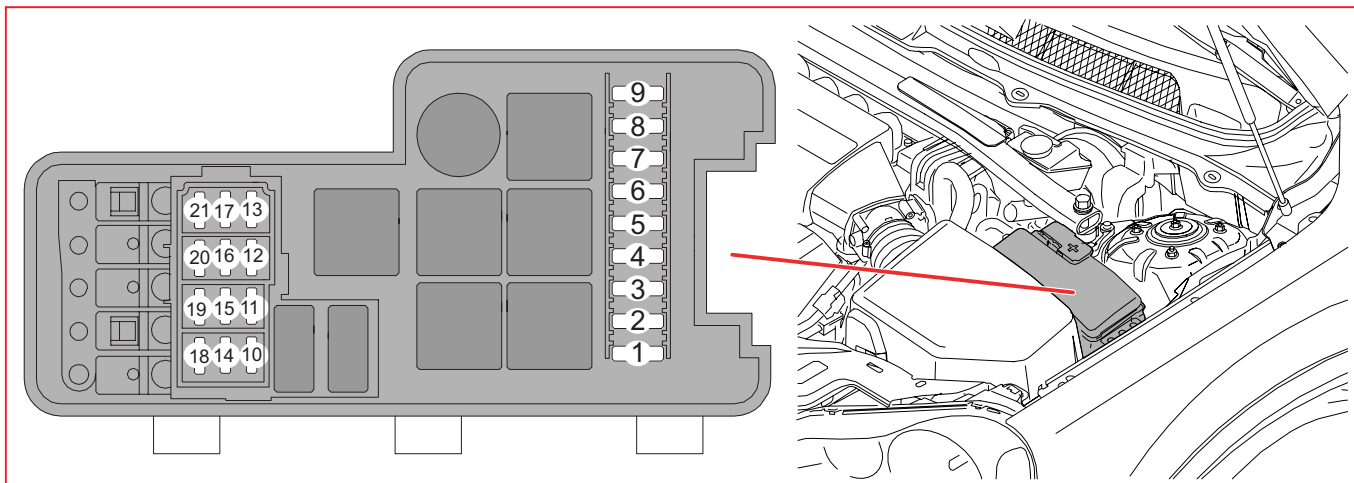
## Engine compartment 11B/1-12



### 11B Fuses in engine compartment XC90

| No.       | Fuse function  | via                   | A       |
|-----------|--|-----------------------|---------|
| 1         | 4/16 Brake Control Module (BCM)  | -                     | 30      |
| 2         | 4/16 Brake Control Module (BCM)  | -                     | 30      |
| 3         | 6/104 High pressure headlight washer   | 2/182                 | 35      |
| 4         | 6/35 Fuel pump, auxiliary heater<br>6/73 Coolant pump, auxiliary heater<br>9/30 Auxiliary heater   | 4/7<br>4/7<br>4/7     | 25      |
| 5         | 54/8 Connector cable harness extra lights, 30-feed   | -                     | 20      |
| 6         | 6/25 Starter motor   | 2/35                  | 35      |
| 7         | 2/90 Relay, windshield wiper, low/high speed<br>2/91 Relay, intermittent wiping<br>6/1 Windshield wiper motor  | -<br>-<br>2/90, 2/91  | 25      |
| 8         | 4/28 Transmission Control Module (TCM), TF-80SC AWD  | -                     | 15      |
| 9         | 6/33 Fuel pump   | 4/56                  | 15      |
| 10        | 20/3-8 Spark plug and ignition coil<br>20/12-13 Spark plug and ignition coil<br>20/14 Condenser, ignition coils, 8-cyl.<br>8/111 Solenoid valve, high-pressure, Diesel<br>4/46 Engine Control Module (ECM), Diesel | -<br>-<br>-<br>-<br>- | 20      |
| 11        | 6/44 Cooling fan, electrics box, engine compartment<br>7/51 Accelerator pedal sensor<br>8/3 Electromagnetic clutch, climate control system   | -<br>-<br>2/22        | 10      |
| 12        | 7/17 Mass airflow sensor (MAF), Diesel<br>4/46 Engine Control Module (ECM), Gasoline<br>7/17 Mass airflow sensor (MAF), Gasoline<br>8/6-11 Injectors, Gasoline<br>8/115-116 Injectors, Gasoline                    | -<br>-<br>-<br>-<br>- | 5<br>15 |
| continues |  |                       |         |

## Engine compartment 11B/13-15

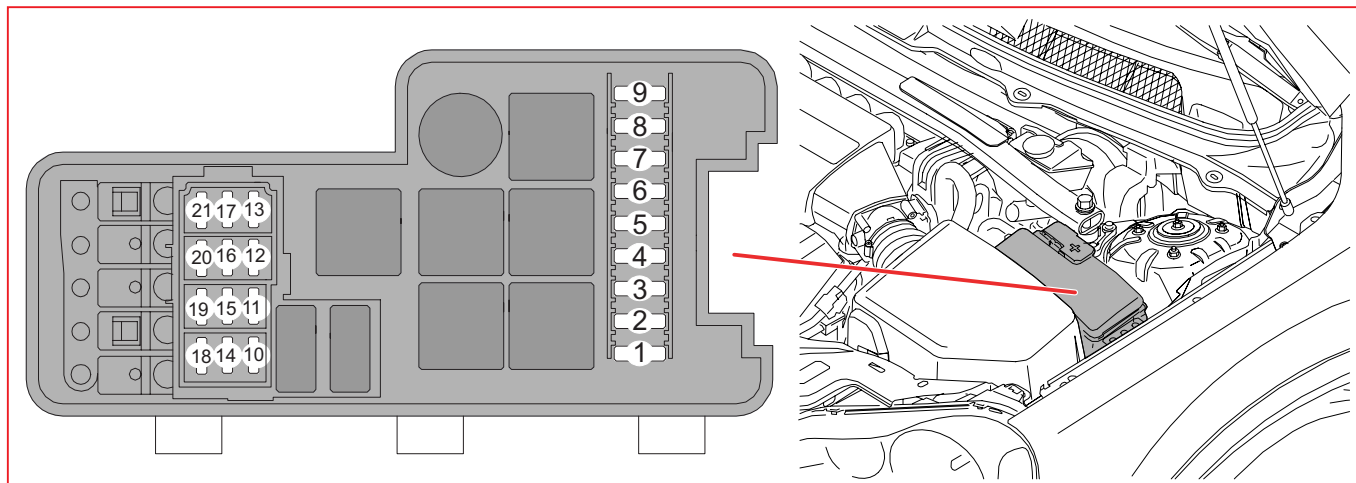


## 11B Fuses in engine compartment XC90

| No.       | Fuse function  | via  | A  |
|-----------|--|------|----|
| 13        | 4/46 Engine Control Module (ECM), 8-cyl.                     | -    | 10 |
| 14        | 7//15 Heated oxygen sensor                                   | -    | 20 |
|           | 7/15 Front heated oxygen sensor, bank A, 8-cyl.              | -    |    |
|           | 7/82 Heated oxygen sensor, diagnosis 1                       | -    |    |
|           | 7/82 Front heated oxygen sensor, bank B, 8-cyl.              | -    |    |
|           | 7/103 Heated oxygen sensor 3                                 |      |    |
|           | 7/103 Rear heated oxygen sensor, bank A, 8-cyl.              |      |    |
|           | 7/104 Rear heated oxygen sensor, bank B, 8-cyl.              |      |    |
| 15        | 2/14 Relay, glow plug unit                                   | -    | 10 |
|           | 6/67 Pump, fuel leakage control                              | -    |    |
|           | 8/17 EGR valve, Diesel                                       | -    |    |
|           | 8/18 EVAP valve  | -    |    |
|           | 8/19 Solenoid, variable valve timing intake                  | -    |    |
|           | 8/28 Turbo control valve                                     | -    |    |
|           | 8/64 Solenoid valve, engine mounting, Diesel                 | -    |    |
|           | 8/81 Solenoid, variable valve timing outlet                  | -    |    |
|           | 8/82 Solenoid, variable turbo geometry, Diesel               | -    |    |
|           | 9/32 PTC resistor - air preheating                           | -    |    |
|           | 4/46 Engine Control Module (ECM), 8-cyl.                     | -    | 15 |
|           | 6/67 Pump, fuel leakage control, 8-cyl.                      | -    |    |
|           | 7/17 Mass air flow sensor (MAF), 8-cyl.                      | -    |    |
|           | 8/3 Electromagnetic clutch, climate control system, 8-cyl.   | 2/22 |    |
|           | 8/18 EVAP valve, 8-cyl.                                      | -    |    |
|           | 8/19 Solenoid, variable valve timing intake, bank A, 8-cyl.  | -    |    |
|           | 8/81 Solenoid, variable valve timing outlet, bank A, 8-cyl.  | -    |    |
|           | 8/107 Valve, variable intake, 8-cyl.                         | -    |    |
|           | 8/117 Solenoid, variable valve timing intake, bank B, 8-cyl. | -    |    |
|           | 8/118 Solenoid, variable valve timing outlet, bank B, 8-cyl. | -    |    |
| continues |  |      |    |

## Fuses

### Engine compartment 11B/16-20

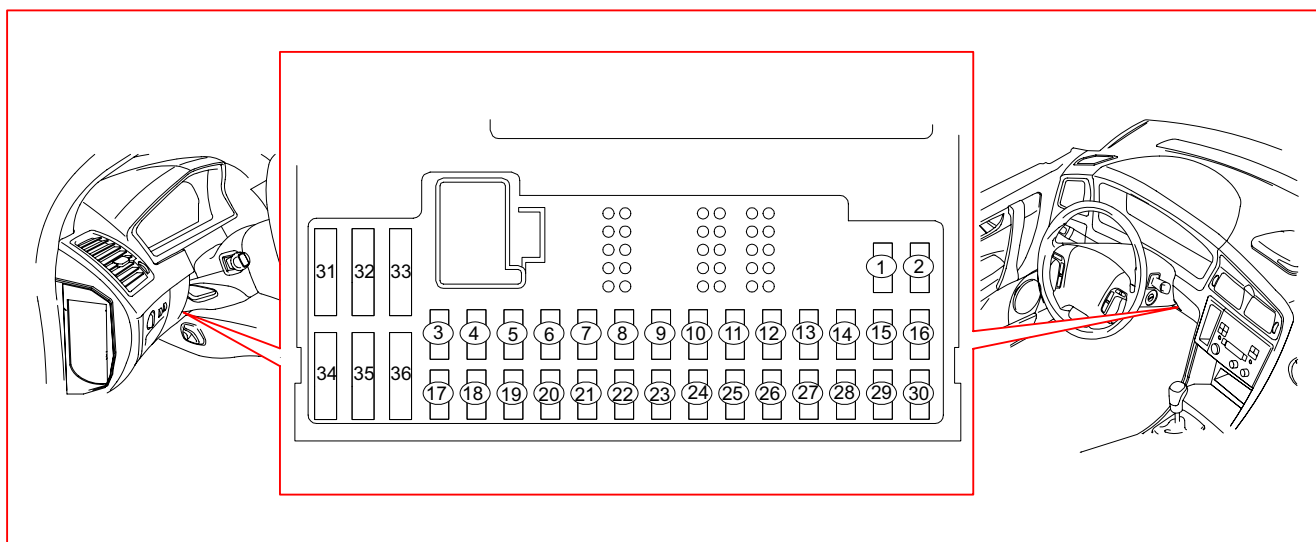


### 11B Fuses in engine compartment XC90

| No. | Fuse function   | via  | A  |
|-----|---|------|----|
| 16  | 10/1 Left front lamp housing, daytime running lights  | 4/56 | 20 |
|     | 10/70 Left-hand low beam                              | 4/56 |    |
| 17  | 10/2 Right front lamp housing, daytime running lights | 4/56 | 20 |
|     | 10/66 Right-hand low beam                             | 4/56 |    |
| 19  | 2/32 Main relay, engine management system             | -    | 5  |
|     | 4/46 Engine Control Module (ECM)                      | -    |    |
| 20  | 10/11 Front left parking light                        | 4/56 | 15 |
|     | 10/12 Front right parking light                       | 4/56 |    |
|     | 10/71 Side running light, front left                  | 4/56 |    |
|     | 10/73 Side running light, front right                 | 4/56 |    |

# Fuses

## Central Electronic Module (CEM) F1-F14

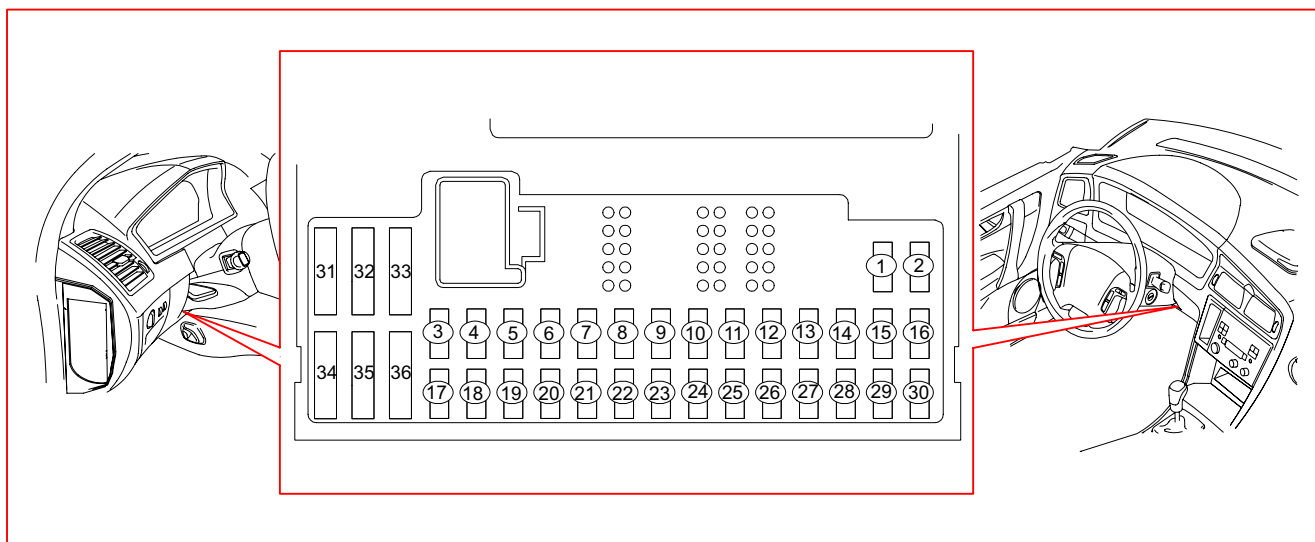


### 4/56 Central Electronic Module (CEM)

| No. | Fuse function  | via   | A  |
|-----|--|---|----|
| F1  | 9/13 Seat Heater Module (SHM), right-hand  | -   | 15 |
| F2  | 9/12 Seat Heater Module (SHM), left-hand   | -   | 15 |
| F3  | 16/10 Horn 1<br>16/11 Horn 2   | -<br>-  | 15 |
| F5  | 16/46 Multimedia display, XC90<br>16/94 Infotainment Control Module (ICM), XC90<br>16/106 Control module, CD player (MP2), XC90<br>16/107 Control module, MD player (MP1), XC90<br>16/108 Multimedia module (MMM), XC90<br>54/112 Connector cable harness Infotainment, increased D-feed, XC90   | -<br>-<br>-<br>-<br>-<br>-                                    | 10 |
| F8  | 16/35 Siren Control Module (SCM)   | -   | 5  |
| F9  | 3/9 Brake light contact  | -   | 5  |
| F10 | 3/112 Climate Control Module (CCM)<br>4/7 Combustion Preheater Module (CPM)<br>4/52 Power Seat Module (PSM)<br>5/1 Driver Information Module (DIM)<br>6/48 Damper Motor Module (DMM), recirculation<br>6/69 Damper Motor Module (DMM), ventilation/floor/defroster<br>6/95 Damper Motor Module (DMM), temperature, left-hand side<br>6/96 Damper Motor Module (DMM), temperature, right-hand side<br>6/102 Damper Motor Module (DMM), defroster<br>6/103 Damper Motor Module (DMM), floor/ventilation<br>7/93 Occupant Weight Sensor (OWS)<br>7/159 Air Quality Sensor (AQS) | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 10 |
| F11 | 9/1 Outlet 12V front<br>9/25 Outlet 12V rear<br>11 F/2 Fuse in cargo compartment auxiliary fuse box  | -<br>-<br>-   | 15 |
| F14 | 6/3 Right-hand headlight wiper motor<br>6/4 Left-hand headlight wiper motor  | -<br>-  | 15 |

# Fuses

## Central Electronic Module (CEM) F15-F34

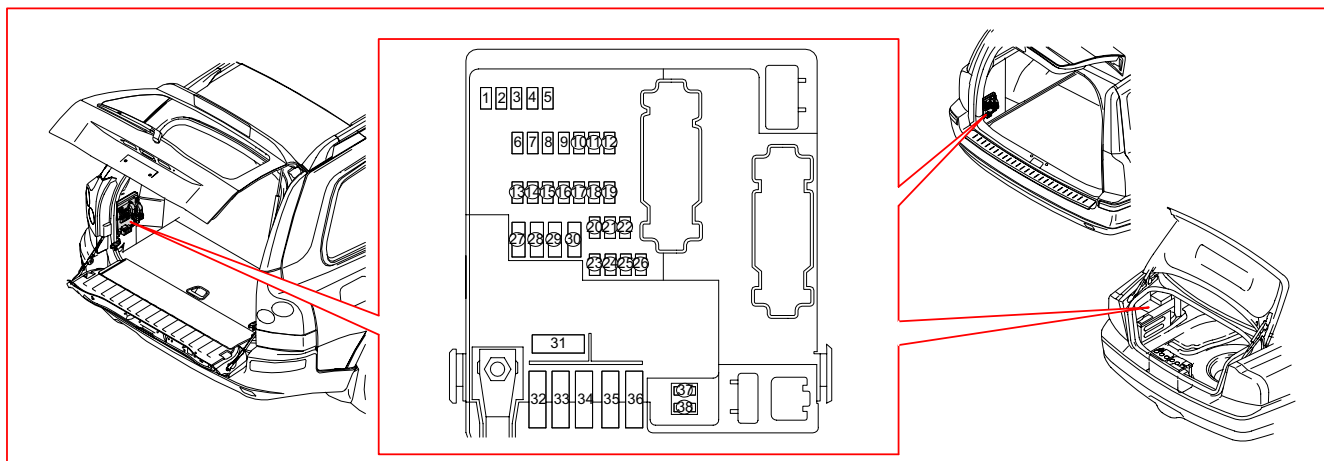


### 4/56 Central Electronic Module (CEM)

| No. | Fuse function                                      | via   | A   |
|-----|--|-------|-----|
| F15 | 4/16 Brake Control Module (BCM)                    | -     | 5   |
| F16 | 4/99 Electronic power steering control module      | -     | 10  |
|     | 6/38 Left-hand headlight level adjustment motor    | -     |     |
|     | 6/39 Right-hand headlight adjustment motor         | -     |     |
|     | 8/76 Gas tank valve, Bi-Fuel                       | 4/58  |     |
|     | 8/88 Solenoid, fuel tank CNG rear, Bi-Fuel         | 4/58  |     |
|     | 8/89 Solenoid, fuel tank CNG front left, Bi-Fuel   | 4/58  |     |
|     | 8/90 Solenoid, fuel tank CNG front right, Bi-Fuel  | 4/58  |     |
|     | 10/1 Left front lamp housing, Bi-Xenon             | -     |     |
|     | 10/2 Right front lamp housing, Bi-Xenon            | -     |     |
| F17 | 10/5 Front left fog light                          | -     | 7.5 |
| F18 | 10/6 Front right fog light                         | -     | 7.5 |
| F20 | 6/113 Coolant pump, 8-cyl.                         | -     | 5   |
| F21 | 3/156 Gear Selector Module (GSM)                   | -     | 10  |
|     | 4/28 Transmission Control Module (TCM)             | -     |     |
|     | 8/36 Shift lock solenoid                           | 3/156 |     |
|     | 8/134 Solenoid, reverse interlock, manual          | -     |     |
| F22 | 10/68 Left-hand high beam                          | -     | 10  |
| F23 | 10/64 Right-hand high beam                         | -     | 10  |
| F28 | 3/27 Power passenger seat module                   | -     | 5   |
|     | 16/1 Audio Module (AUM)                            | -     |     |
|     | 16/46 RTI display, accessory                       | -     |     |
|     | 16/93 Control module, cellular telephone handsfree | -     |     |
| F30 | 27/3 Left-hand Camera Module (LCM)                 | -     | 5   |
|     | 27/4 Right-hand Camera Module (RCM)                | -     |     |
| F33 | 6/114 Vacuum pump                                  | 8/84  | 20  |
| F34 | 6/3 Right-hand headlight wiper motor               | -     | 15  |
|     | 6/4 Left-hand headlight wiper motor                | -     |     |
|     | 6/127 Washer motor                                 | -     |     |

## Fuses

### Rear Electronic Module (REM) F1-F6



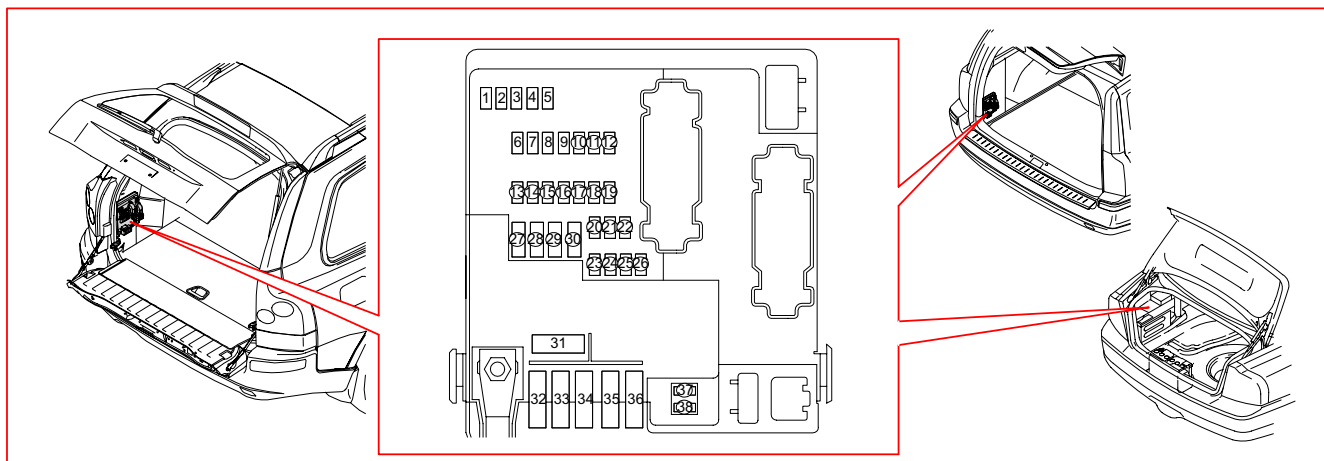
#### 4/58 Rear Electronic Module (REM)

| No. | Fuse function |  | via   | A   |
|-----|---------------|--|-------|-----|
| F1  | 10/48         | Right-hand reversing light                                     | -     | 10  |
|     | 10/55         | Left-hand reversing light                                      | -     |     |
| F2  | 10/3          | License plate lighting   | -     | 20  |
|     | 10/19         | Auxiliary brake light  | -     |     |
|     | 10/42         | Rear right parking light                                       | -     |     |
|     | 10/44         | Right-hand tail light lamp 1                                   | -     |     |
|     | 10/45         | Right-hand tail light lamp 2                                   | -     |     |
|     | 10/46         | Fog light, right rear  | -     |     |
|     | 10/49         | Rear left parking light  | -     |     |
|     | 10/51         | Left-hand tail light lamp 1                                    | -     |     |
|     | 10/52         | Left-hand tail light lamp 2                                    | -     |     |
|     | 10/53         | Fog light, left rear   | -     |     |
|     | 10/127        | Lighting, cargo compartment, left-hand side                    | -     |     |
| F3  | 4/78          | Accessory Electronic Module (AEM)                              | -     | 15  |
|     | 4/106         | Control module, remote parking heater start                    | -     |     |
| F5  | 4/58          | Rear Electronic Module (REM)                                   | -     | 10  |
| F6  | 16/15         | CD changer   | -     | 7.5 |
|     | 16/36         | TV receiver  | 16/45 |     |
|     | 16/45         | Road Traffic Information (RTI)                                 | -     |     |
|     | 16/46         | RTI display, accessory   | -     |     |
|     | 16/149        | MP3 player   | -     |     |
|     | 16/110        | Antenna control module (ATM), XC90                             | -     |     |
|     | 54/98         | Connector cable harness Rear Seat Entertainment, 30-feed, XC90 | -     |     |



## Fuses

### Rear Electronic Module (REM) F7-F27

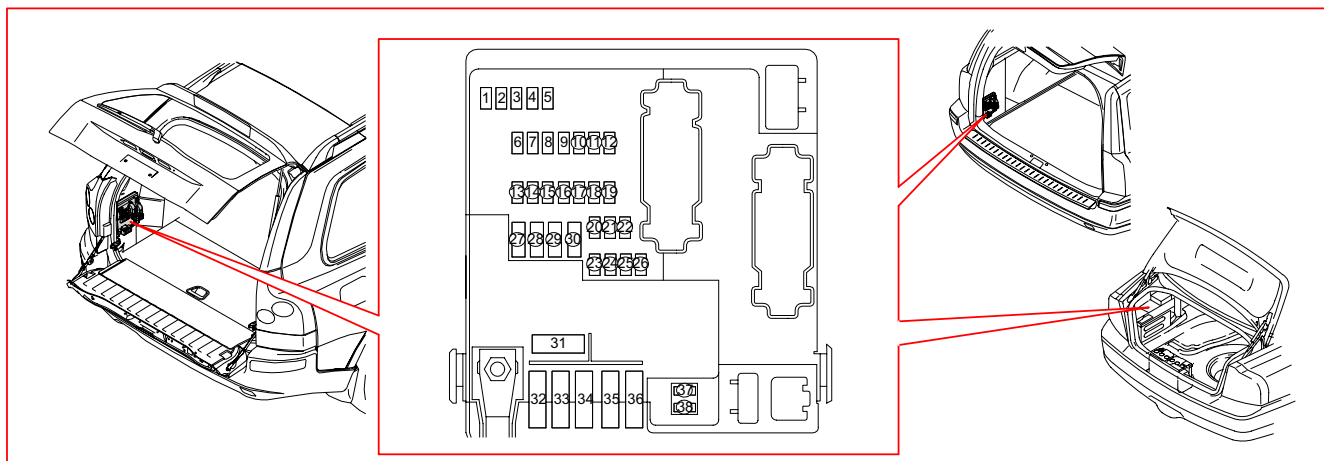


#### 4/58 Rear Electronic Module (REM)

| No. | Fuse function   | via            | A   |
|-----|---|----------------|-----|
| F7  | 17/39 13-pin outlet, tow hitch cable harness  | -              | 15  |
| F8  | 17/19 12V outlet, cargo compartment   | -              | 15  |
| F9  | 2/139 Deadlock relay, right-hand rear door<br>3/86 Rear right door power window switch<br>6/93 Motor, rear right power window | -<br>-<br>3/86 | 20  |
| F10 | 2/138 Deadlock relay, left-hand rear door<br>3/85 Rear left door power window switch<br>6/92 Motor, rear left power window    | -<br>-<br>3/85 | 20  |
| F13 | 8/85 Thermostatic switch and fuel filter heating  | -              | 15  |
| F14 | 16/79 Bass speaker<br>6/76 Climate control system, rear XC90<br>16/79 Subwoofer Module (SUB), XC90                            | -<br>-<br>-    | 15  |
| F17 | 16/145 Satellite radio receiver   | -              | 5   |
| F19 | 6/32 Rear window wiper motor<br>8/59 Rear left head restraint solenoid<br>8/60 Rear right head restraint solenoid             | -<br>-<br>-    | 15  |
| F20 | 17/38 7-pin outlet, tow hitch cable harness<br>17/39 13-pin outlet, tow hitch cable harness                                   | -<br>-         | 20  |
| F23 | 4/82 Differential Electronic Module (DEM)   | -              | 7.5 |
| F24 | 4/84 Suspension Module (SUM)  | -              | 15  |
| F26 | 4/86 Parking Assistance Module (PAM)  | -              | 5   |
| F27 | Main fuse for F20, F23, F24, F26  | -              | 30  |

## Fuses

### Rear Electronic Module (REM) F28-F38

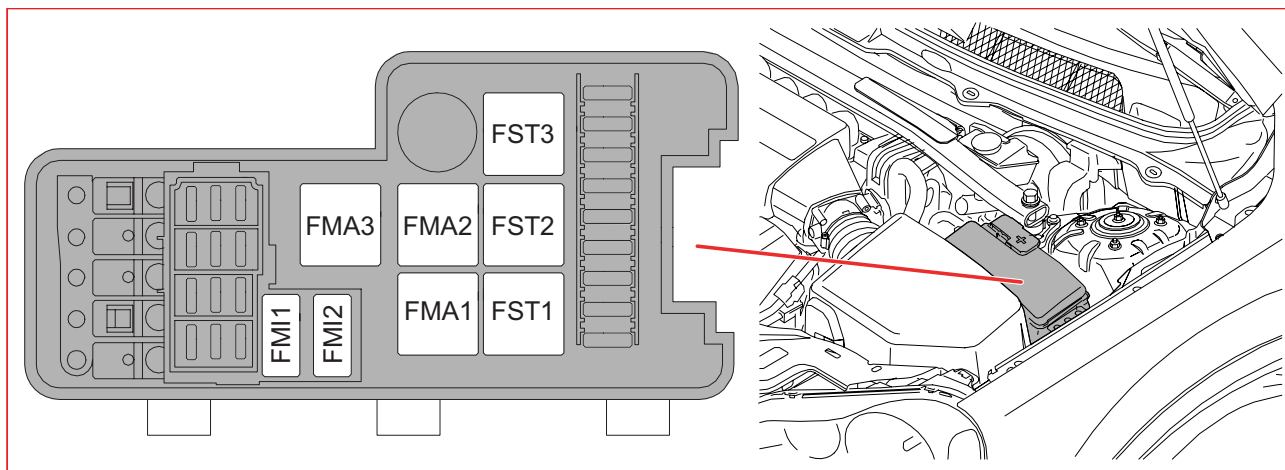


#### 4/58 Rear Electronic Module (REM)

| No. | Fuse function  | via                        | A  |
|-----|--|----------------------------|----|
| F28 | 3/76 Left-hand rear door lock unit<br>3/77 Right-hand rear door lock unit<br>3/78 Trunk lid lock unit<br>6/37 Lock motor, fuel filler cover                                    | -<br>-<br>-<br>-           | 15 |
| F29 | 4/110 Trailer Module<br>- position lights<br>- left-hand direction indicator<br>26/4 Converter cable harness tow hitch<br>- position lights<br>- left-hand direction indicator | -<br>-<br>-<br>-<br>-<br>- | 25 |
| F30 | 4/110 Trailer Module<br>- brake lights<br>- fog lights<br>- right-hand direction indicator   | -<br>-<br>-<br>-           | 25 |
| F31 | Main fuse for F37-F38  | -                          | 40 |
| F37 | 9/2 Heated rear window   | -                          | 20 |
| F38 | 9/2 Heated rear window   | -                          | 20 |

## Relays

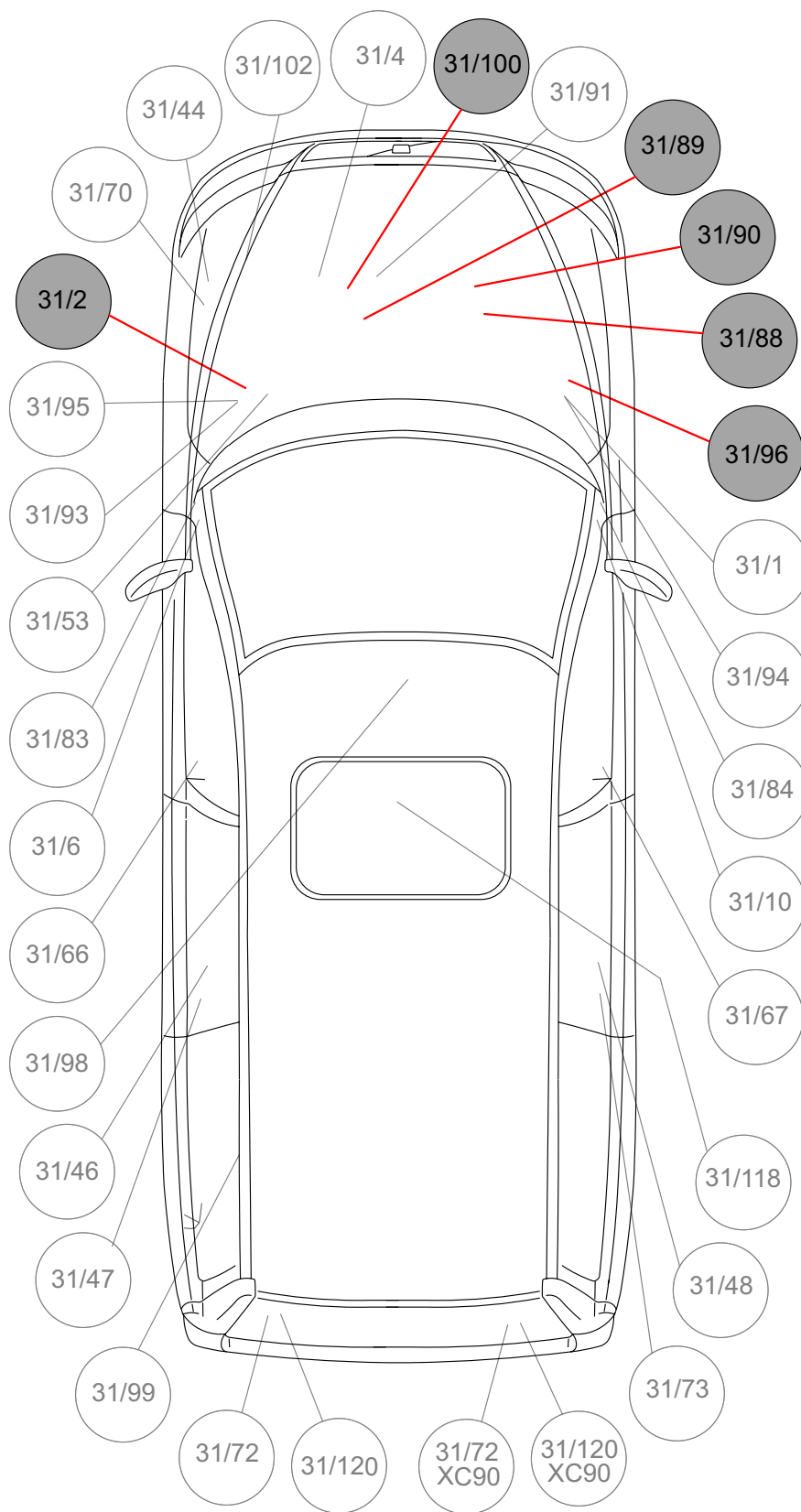
### Engine compartment FMA1 - FST3



### Relays in engine compartment XC90

| Pos  | Relay function |   |
|------|----------------|---|
| FMA1 | 2/35           | Starter motor relay                         |
| FMA2 | 2/14           | Relay, glow plug unit                       |
| FMA3 | 2/32           | Main relay, engine management system        |
| FMI2 | 2/22           | Relay, climate control system               |
| FST1 | 2/90           | Relay, windshield wiper, low/high speed     |
| FST2 | 2/91           | Relay, intermittent wiping                  |
| FST3 | 2/182          | Relay, high pressure headlight washer motor |

## Ground connections Overview



## Ground connection

### 31/2 - 31/100

|             |  |
|-------------|--|
| <b>31/2</b> | <b>Left MacPherson strut tower</b>     |
| 4/46        | Engine Control Module (ECM), 8-cyl.    |
| 4/71        | Cooling fan control module, not 8-cyl. |

|              |  |
|--------------|--|
| <b>31/88</b> | <b>Engine ignition coils</b>             |
| 20/3         | Spark plug and ignition coil             |
| 20/4         | Spark plug and ignition coil, not 8-cyl. |
| 20/5         | Spark plug with ignition coil, 8-cyl.    |

|              |  |
|--------------|--|
| <b>31/89</b> | <b>Engine ignition coils</b>             |
| 20/5         | Spark plug and ignition coil, not 8-cyl. |
| 20/6         | Spark plug and ignition coil, not 8-cyl. |
| 20/7         | Spark plug and ignition coil             |
| 20/8         | Spark plug and ignition coil, not 8-cyl. |
| 20/12        | Spark plug with ignition coil, 8-cyl.    |
| 20/14        | Condenser, ignition coils, 8-cyl.        |

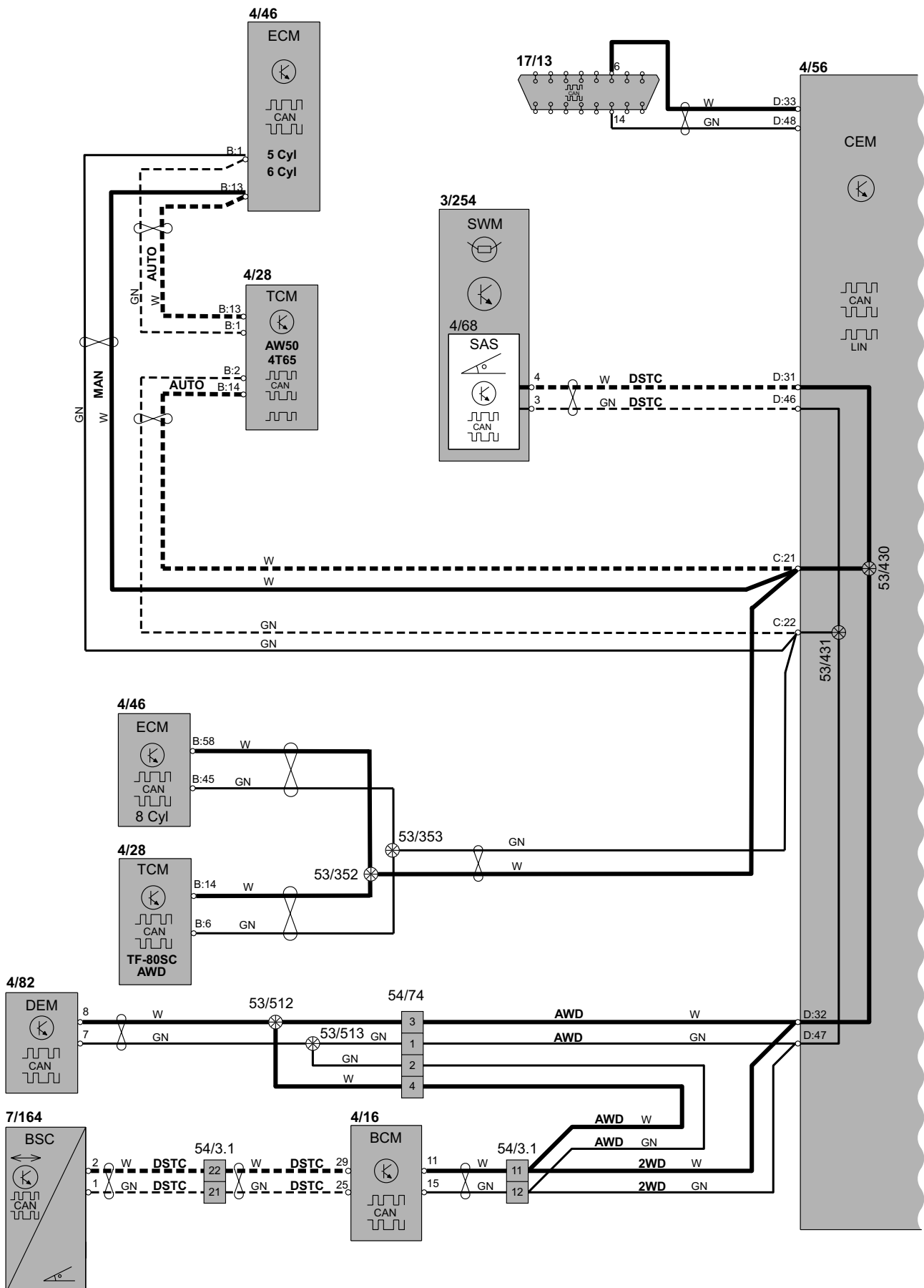
|              |                                       |
|--------------|---------------------------------------|
| <b>31/90</b> | <b>Ground connection, engine</b>      |
| 20/4         | Spark plug with ignition coil, 8-cyl. |
| 20/6         | Spark plug with ignition coil, 8-cyl. |

|              |   |
|--------------|---|
| <b>31/96</b> | <b>Right MacPherson strut tower</b>     |
| 4/46         | Engine Control Module (ECM), not 8-cyl. |
| 4/71         | Cooling fan control module, 8-cyl.      |
| 6/105        | Fuel distributor gas, Bi-Fuel           |
| 9/32         | PTC resistor - air preheating           |

|               |                                       |
|---------------|---------------------------------------|
| <b>31/100</b> | <b>Ground connection, engine</b>      |
| 20/8          | Spark plug with ignition coil, 8-cyl. |
| 20/13         | Spark plug with ignition coil, 8-cyl. |

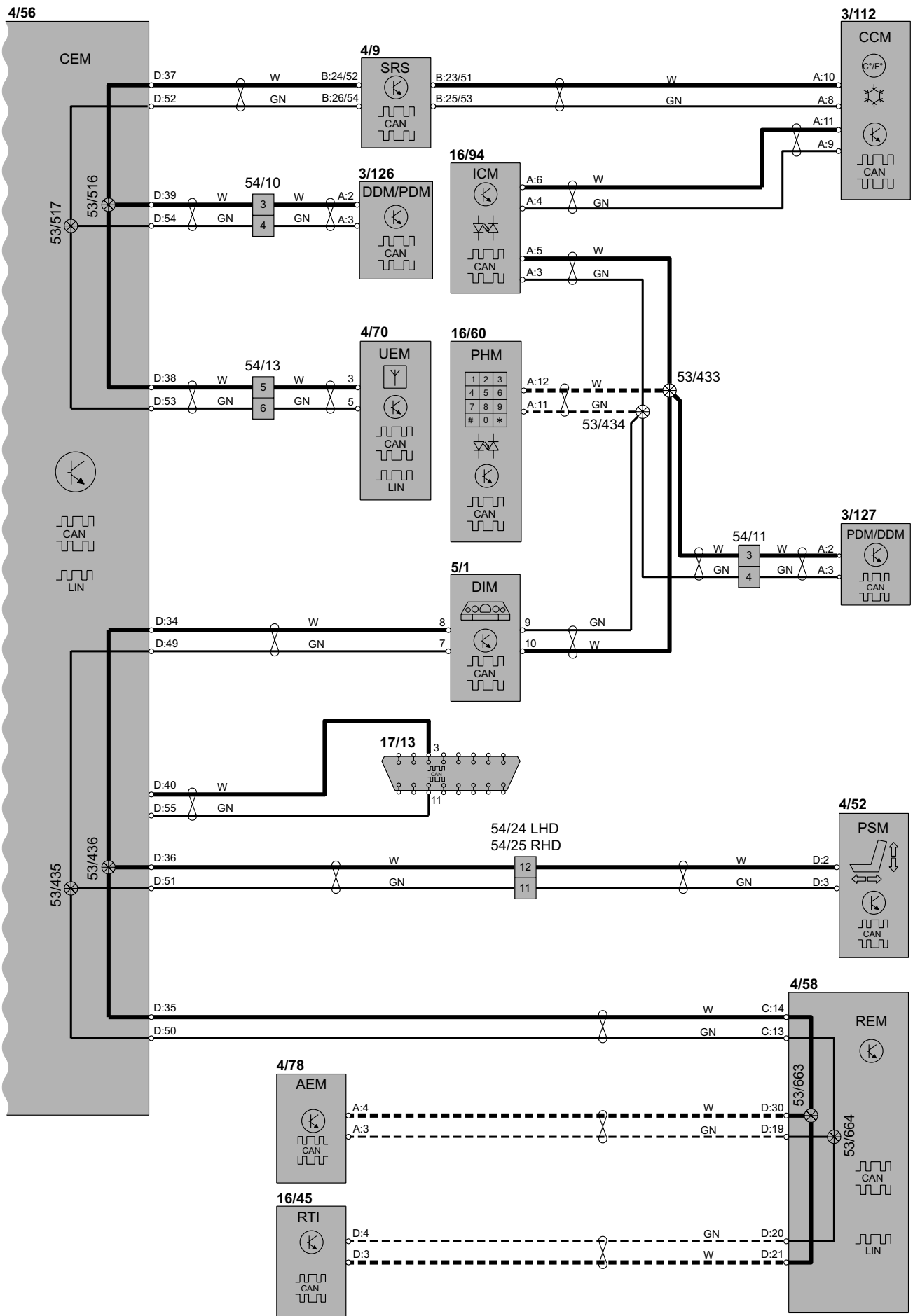
# Control modules

## Data communication, high speed CAN XC90

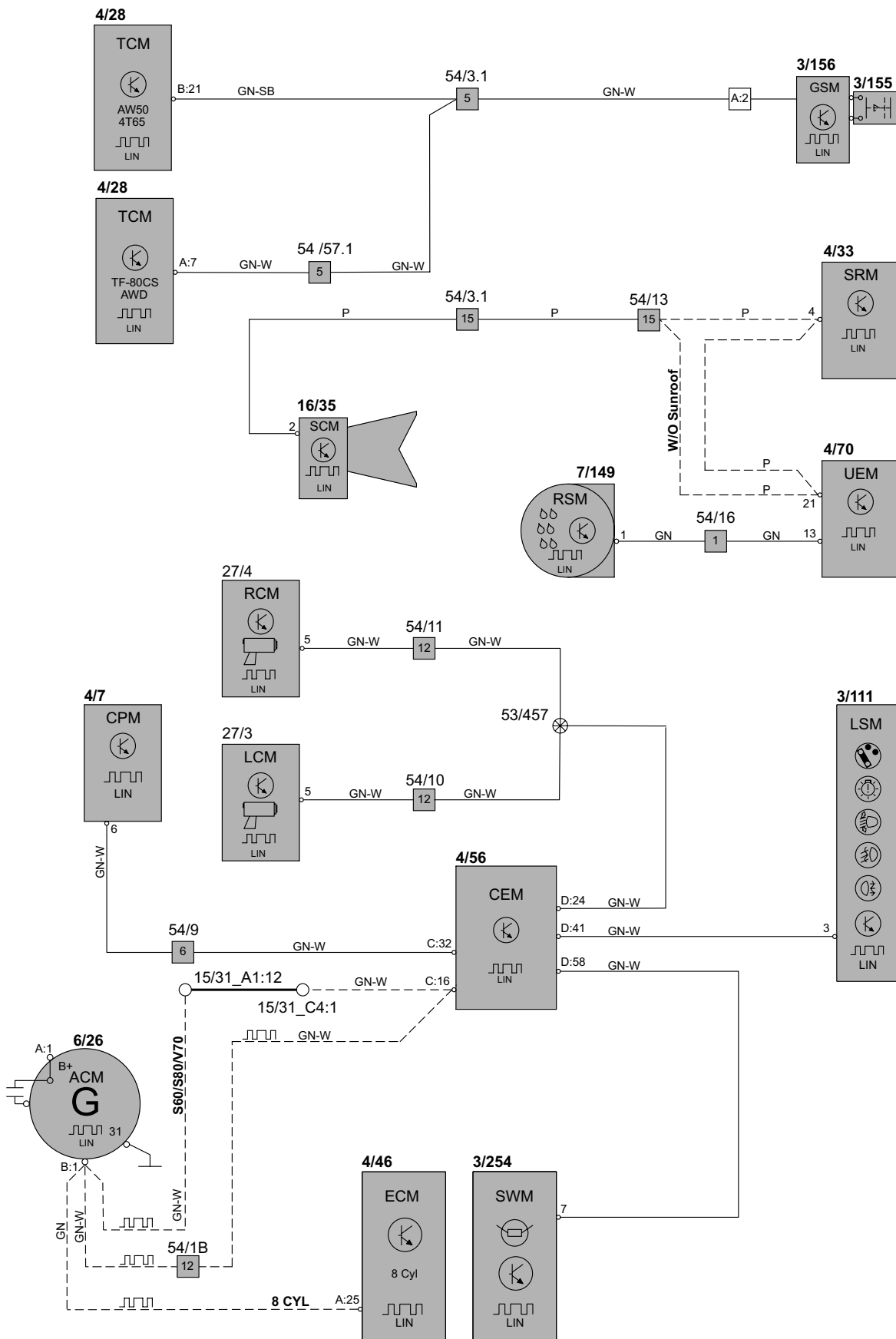


# Control modules

## Data communication, low speed CAN XC90



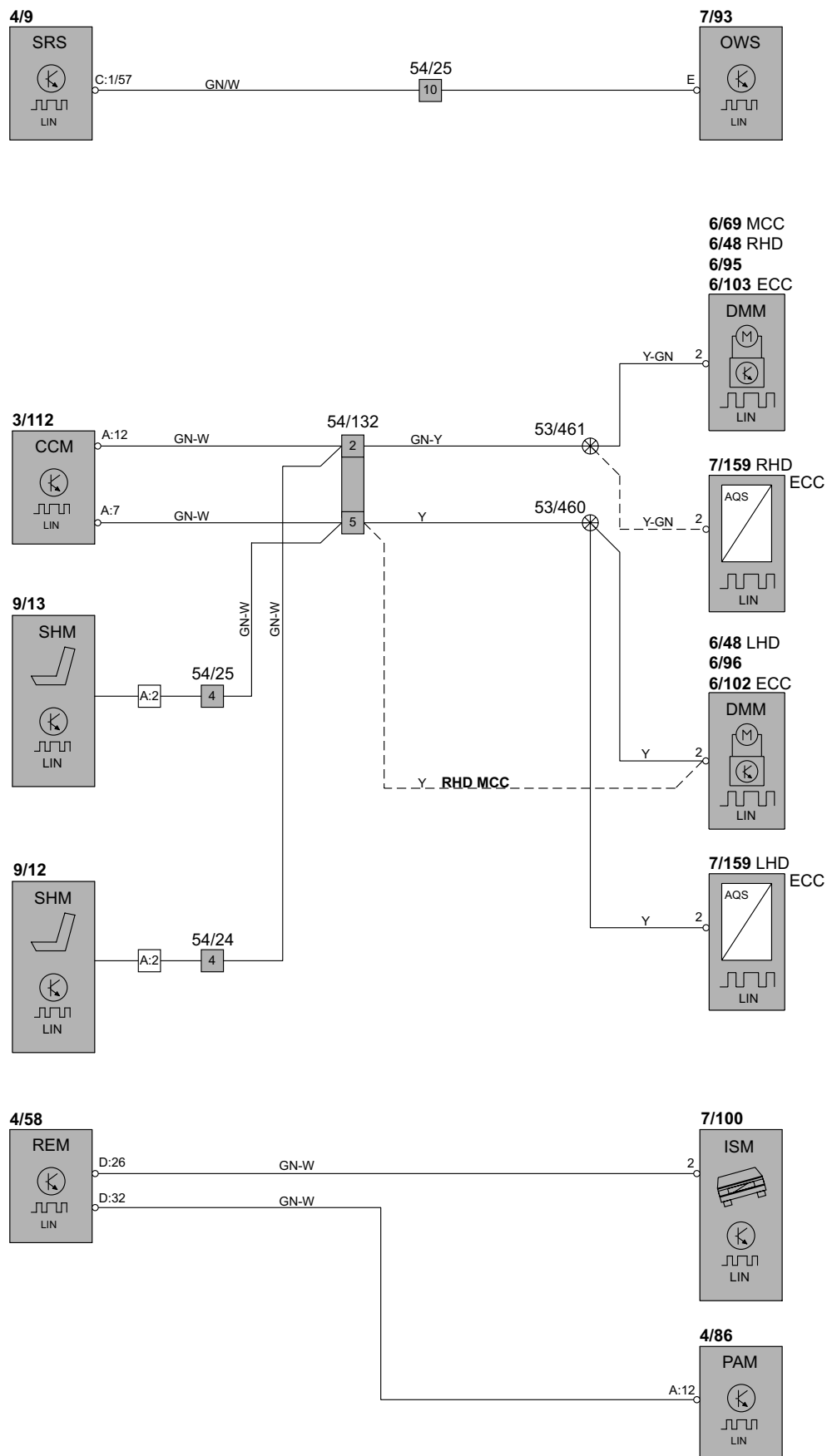
## LIN data communication 1:2





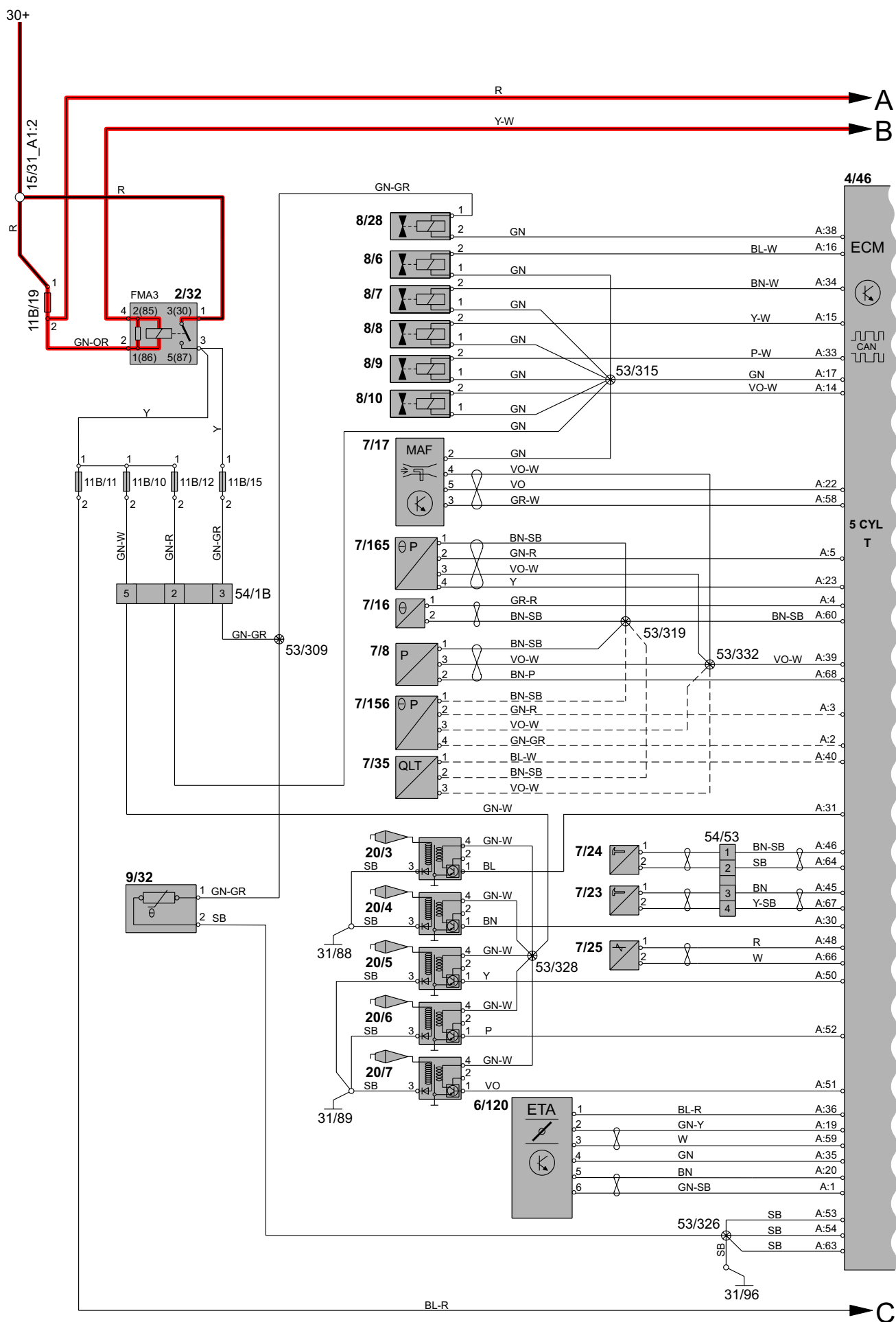
# Control modules

## LIN data communication 2:2



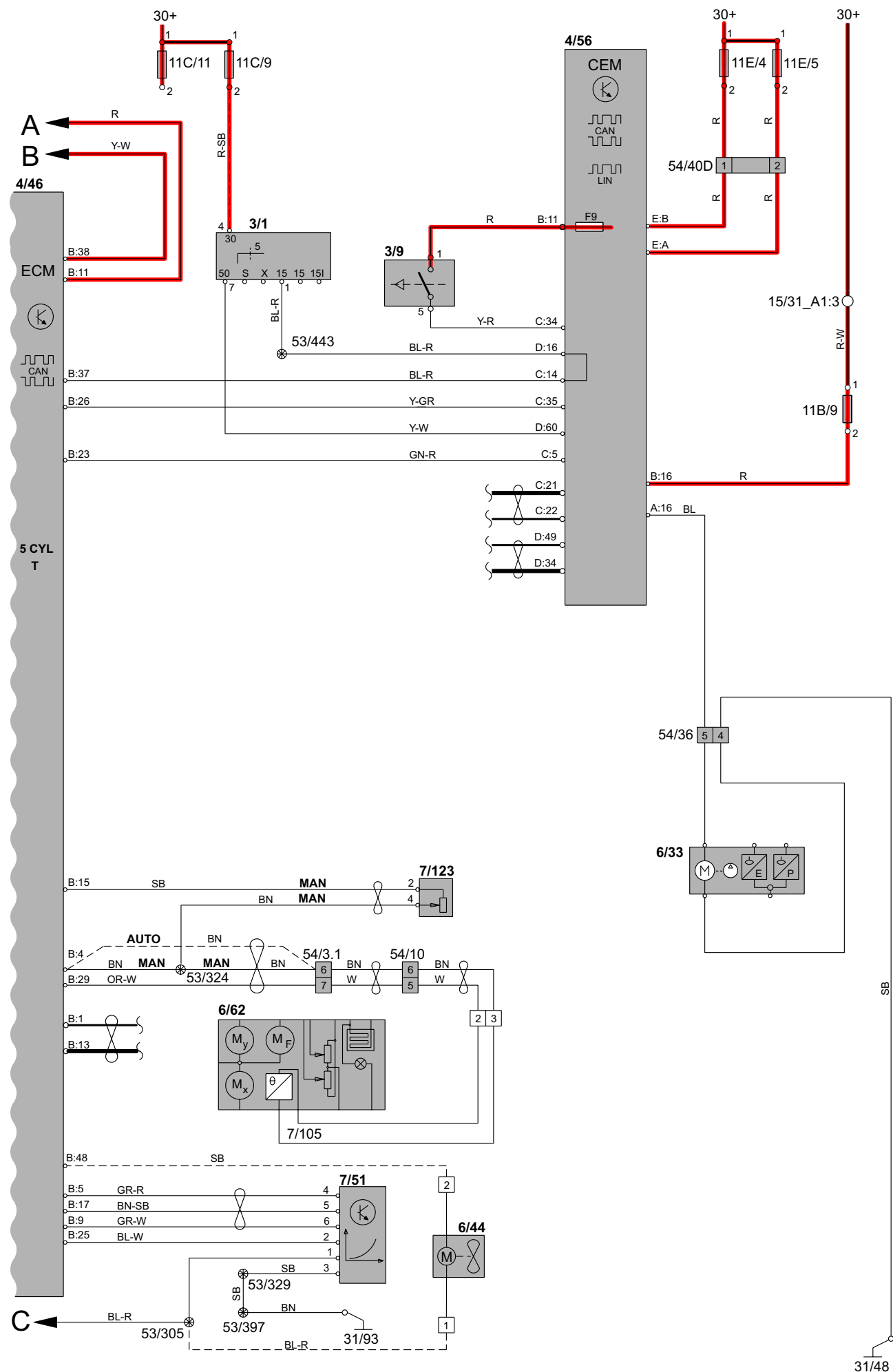
# Group 23 Fuel system

## Engine management system, 5-cyl. XC90 1:2



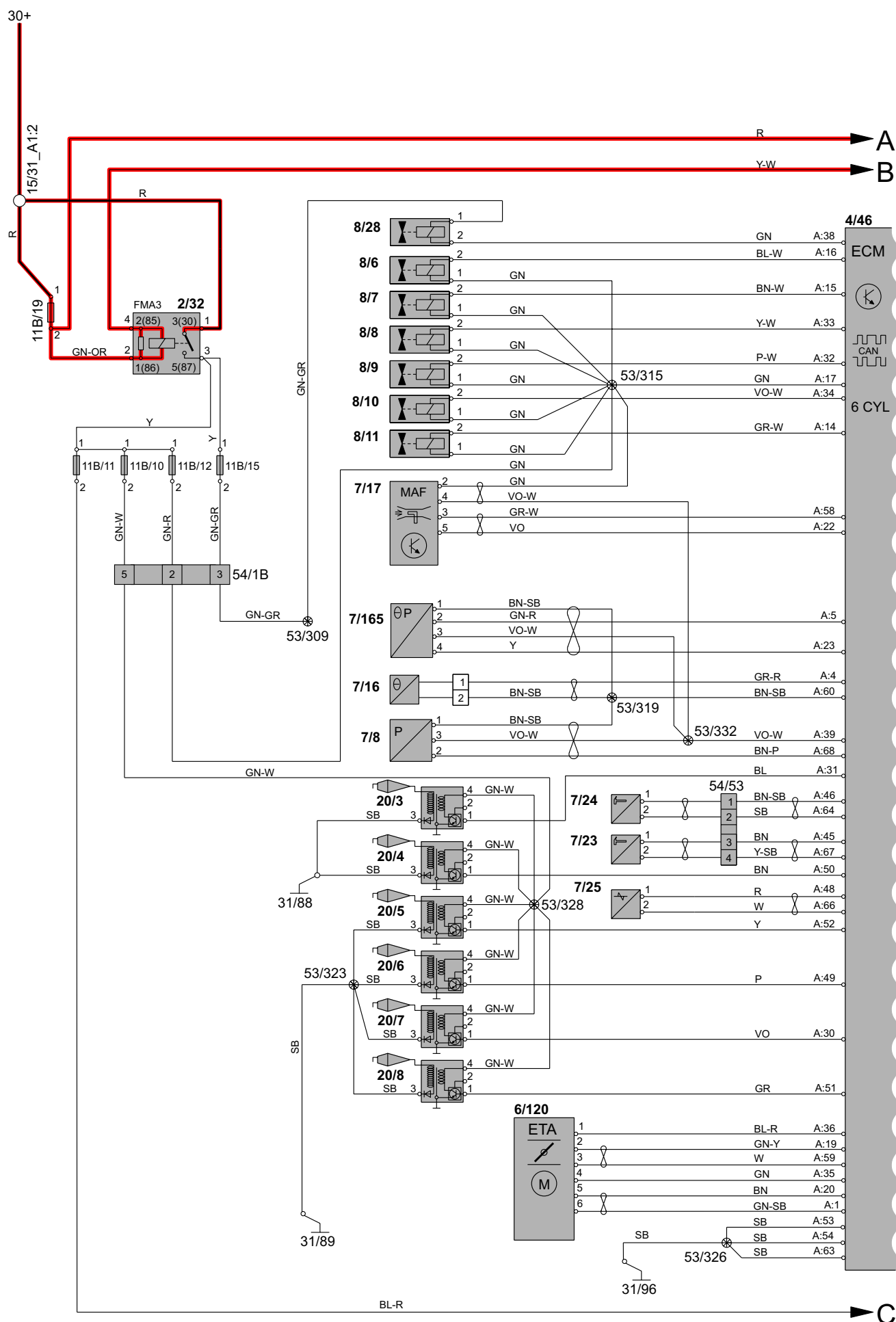
# Group 23 Fuel system

## Engine management system, 5-cyl. XC90 2:2



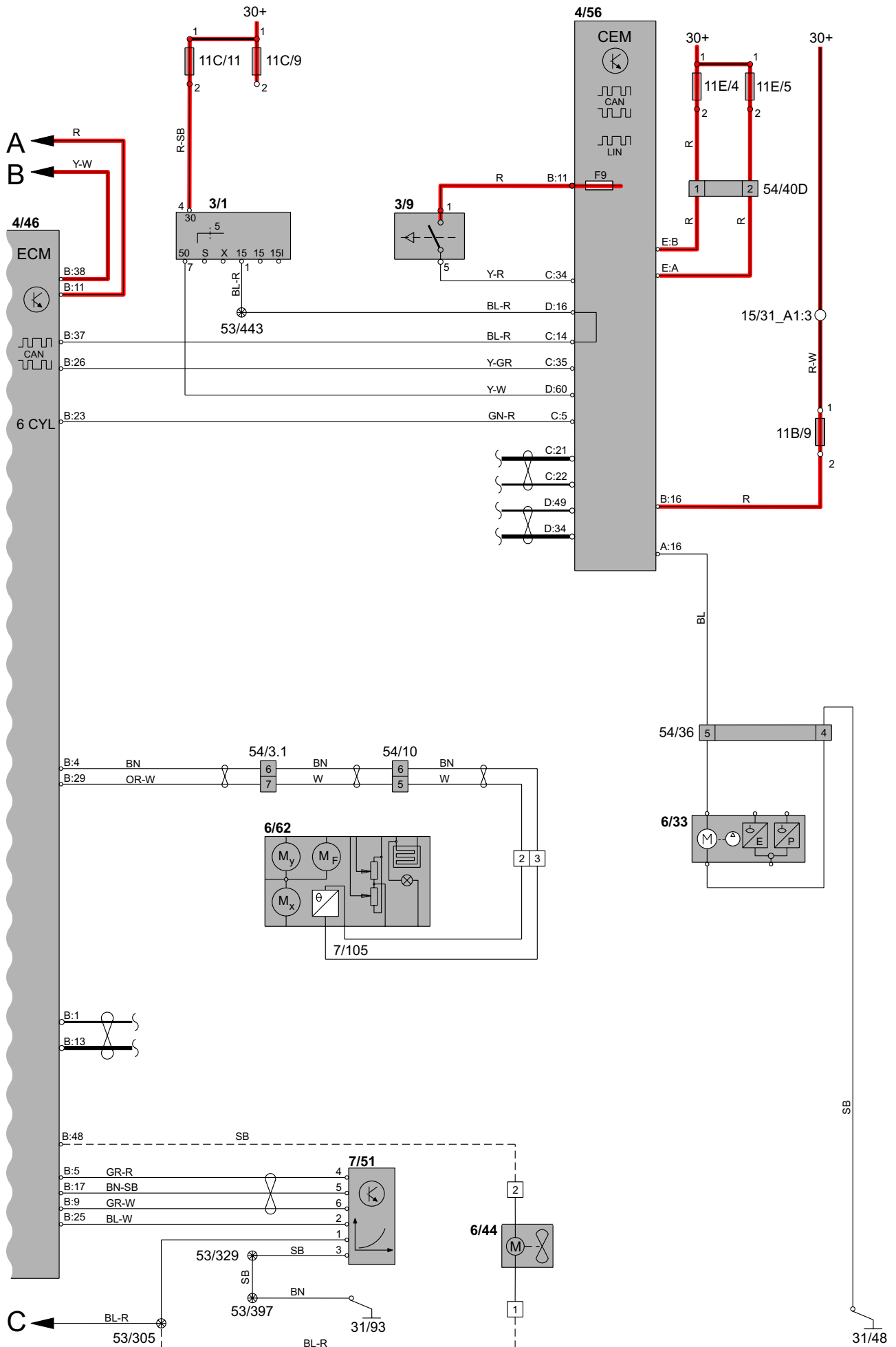
# Group 23 Fuel system

## Engine management system, 6-cyl. XC90 1:2

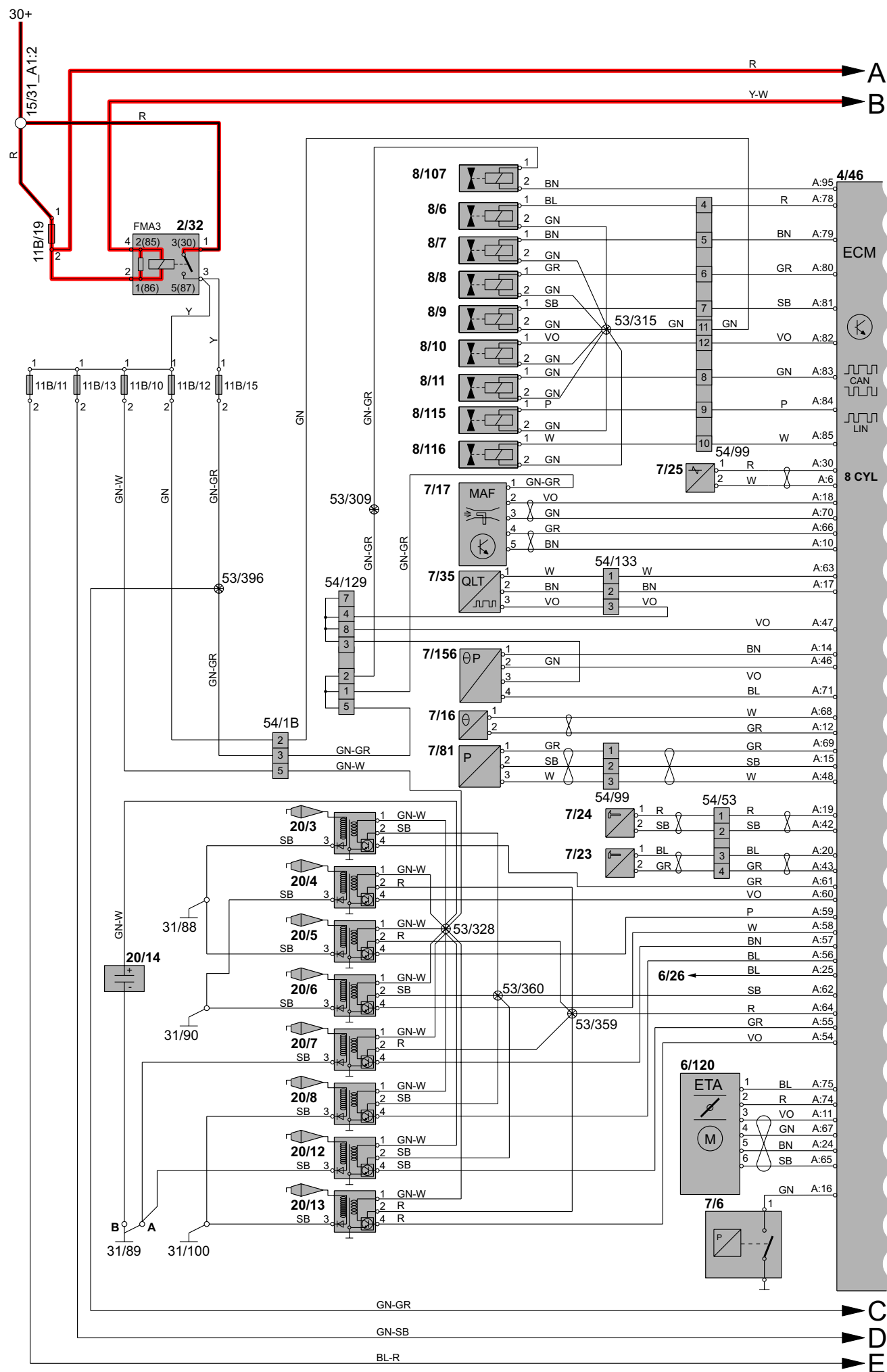


# Group 23 Fuel system

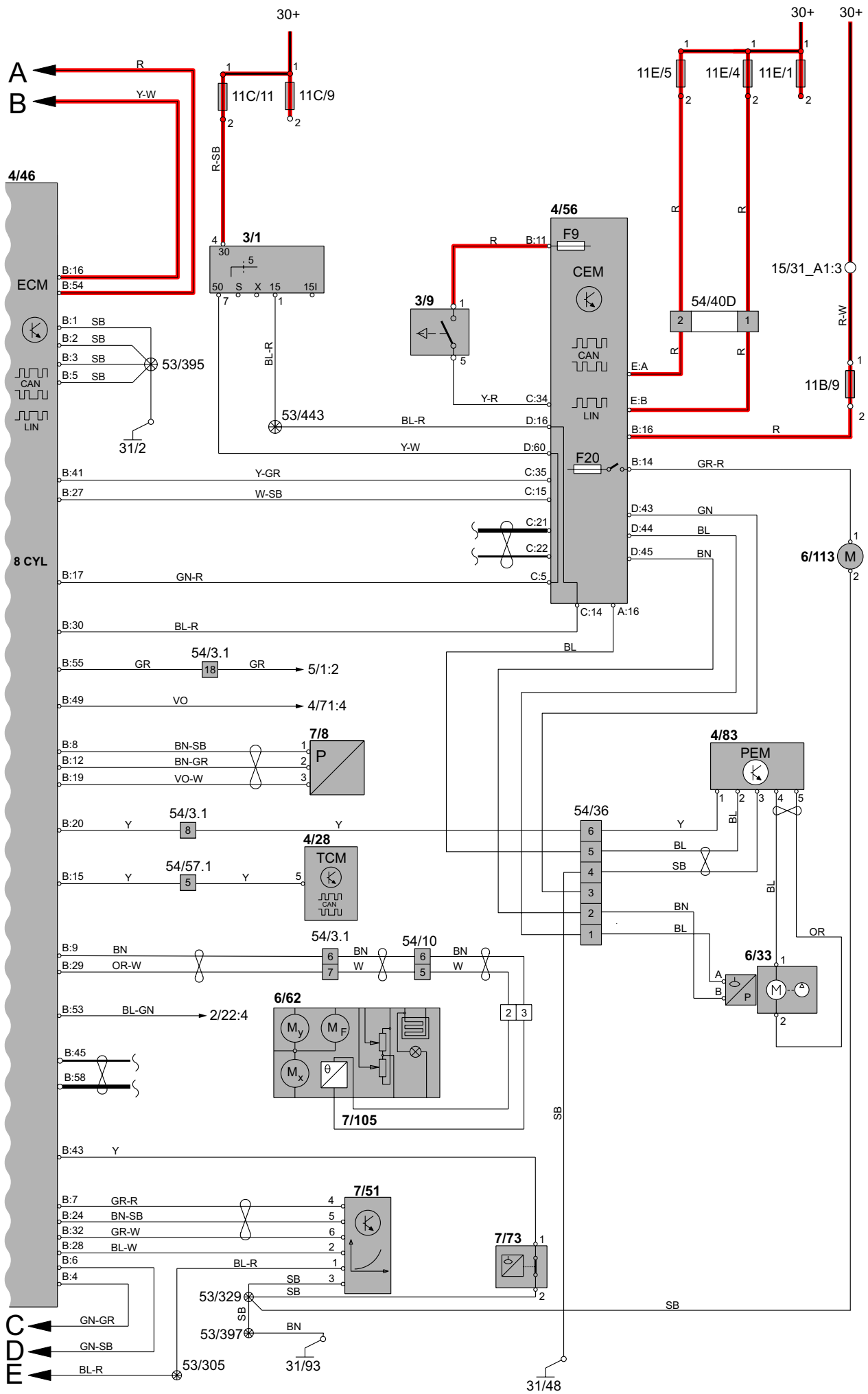
## Engine management system, 6-cyl. XC90 2:2



**Group 23 Fuel system**  
**Engine management system, 8-cyl. XC90 1:2**



**Engine management system, 8-cyl. XC90 2:2**



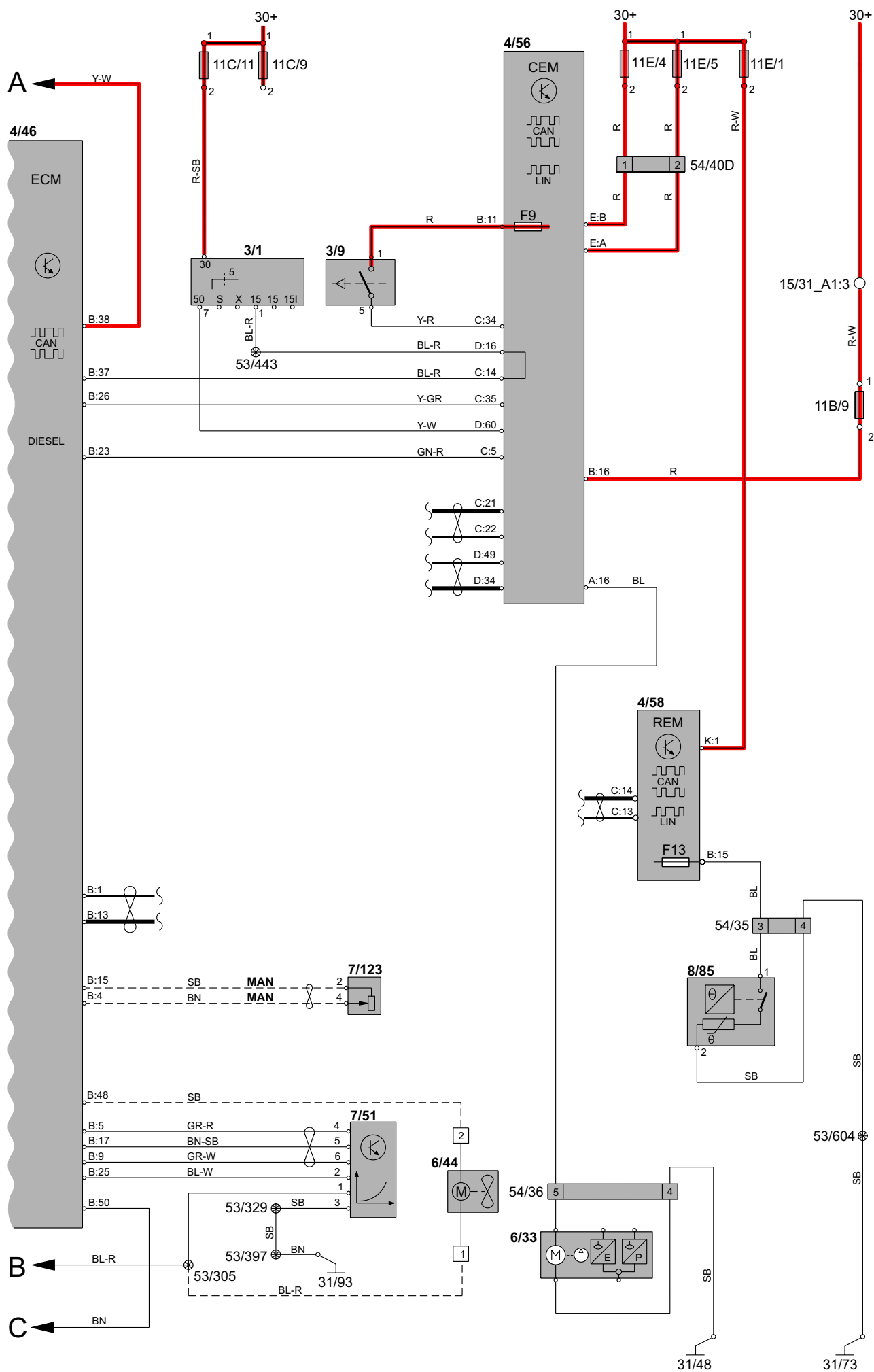
## Engine management system, Diesel XC90 1:2





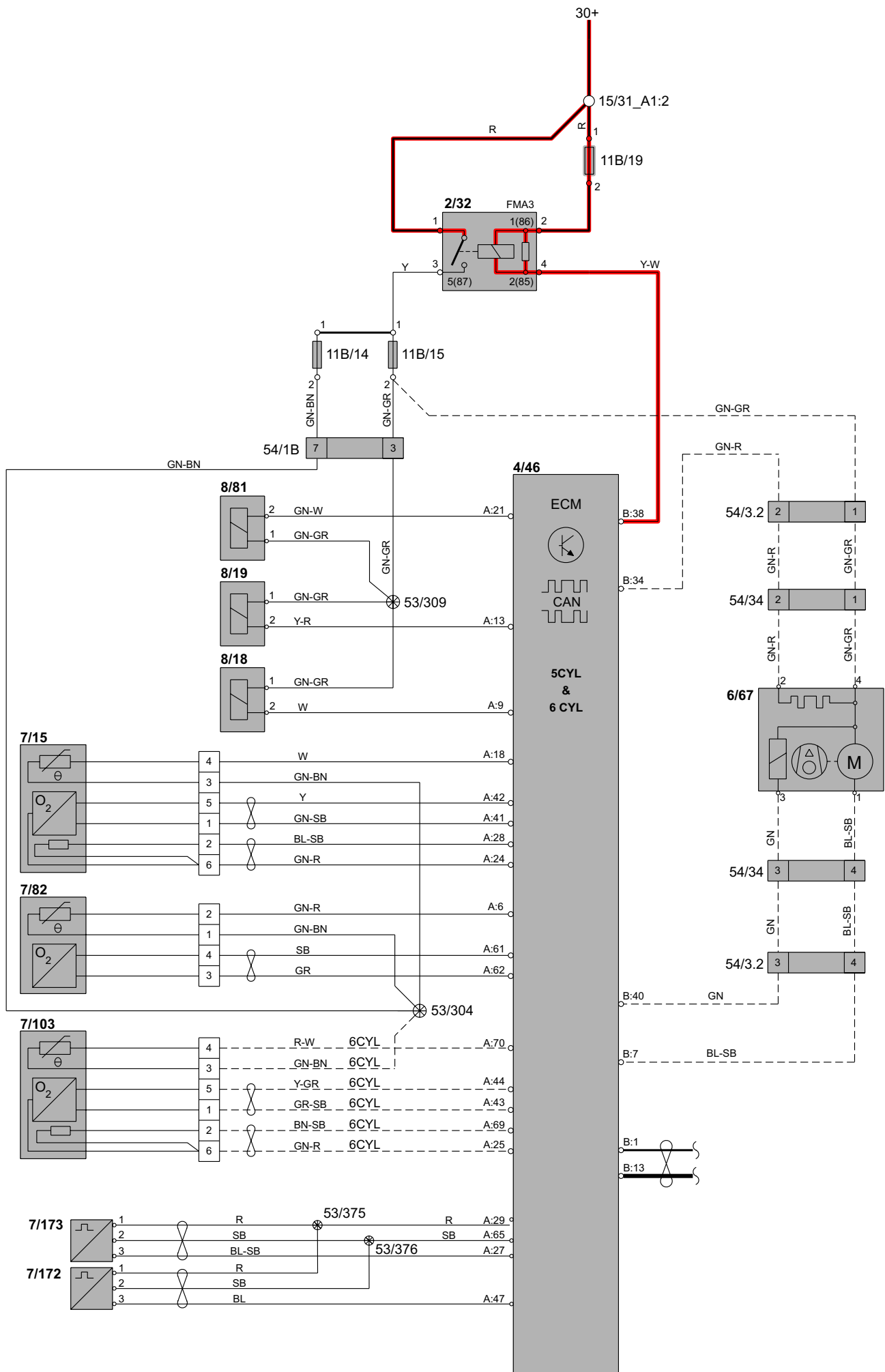
# Group 23 Fuel system

## Engine management system, Diesel XC90 2:2



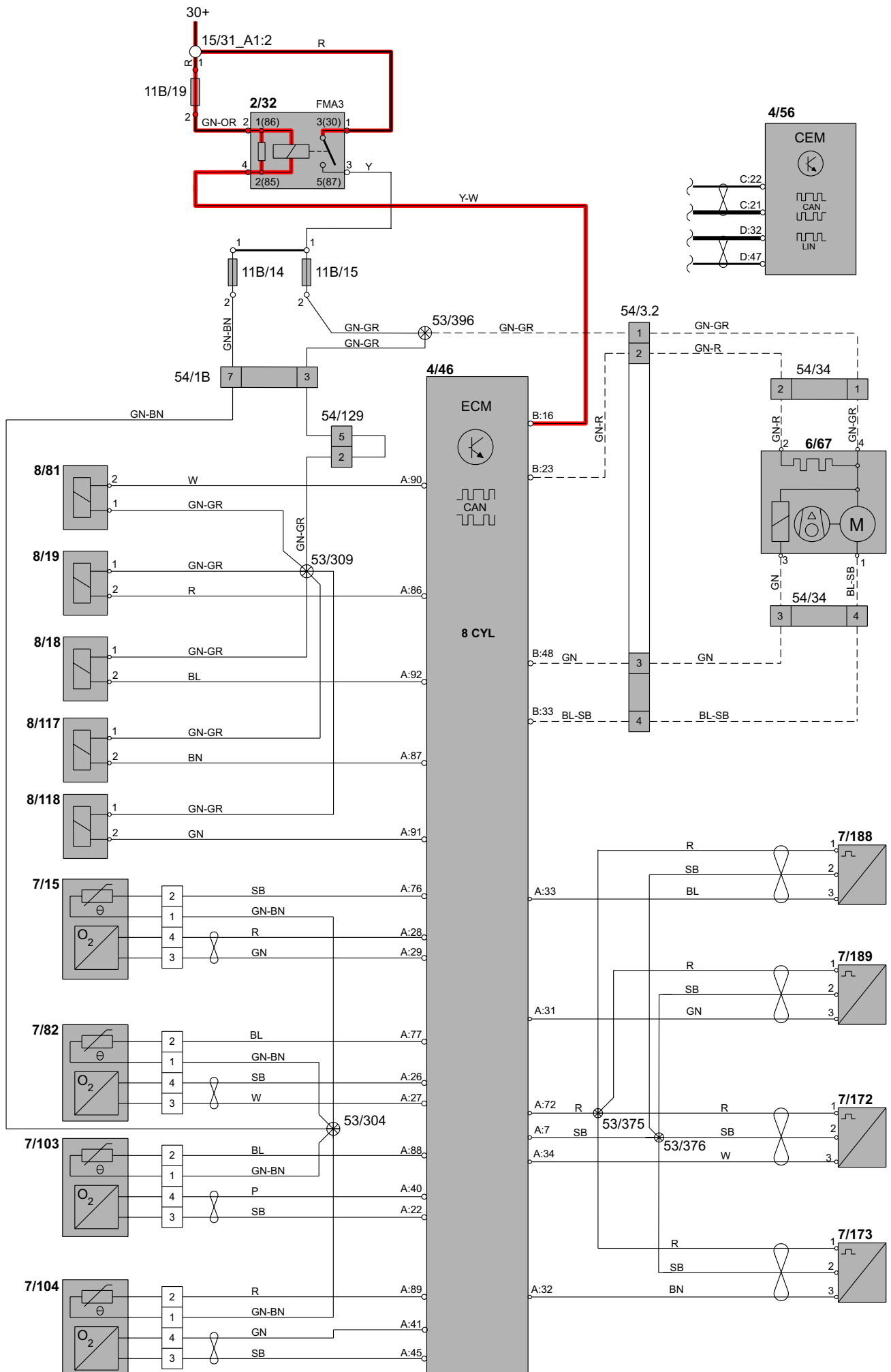
# Group 23 Fuel system

## Emission control 5 & 6-cyl. XC90



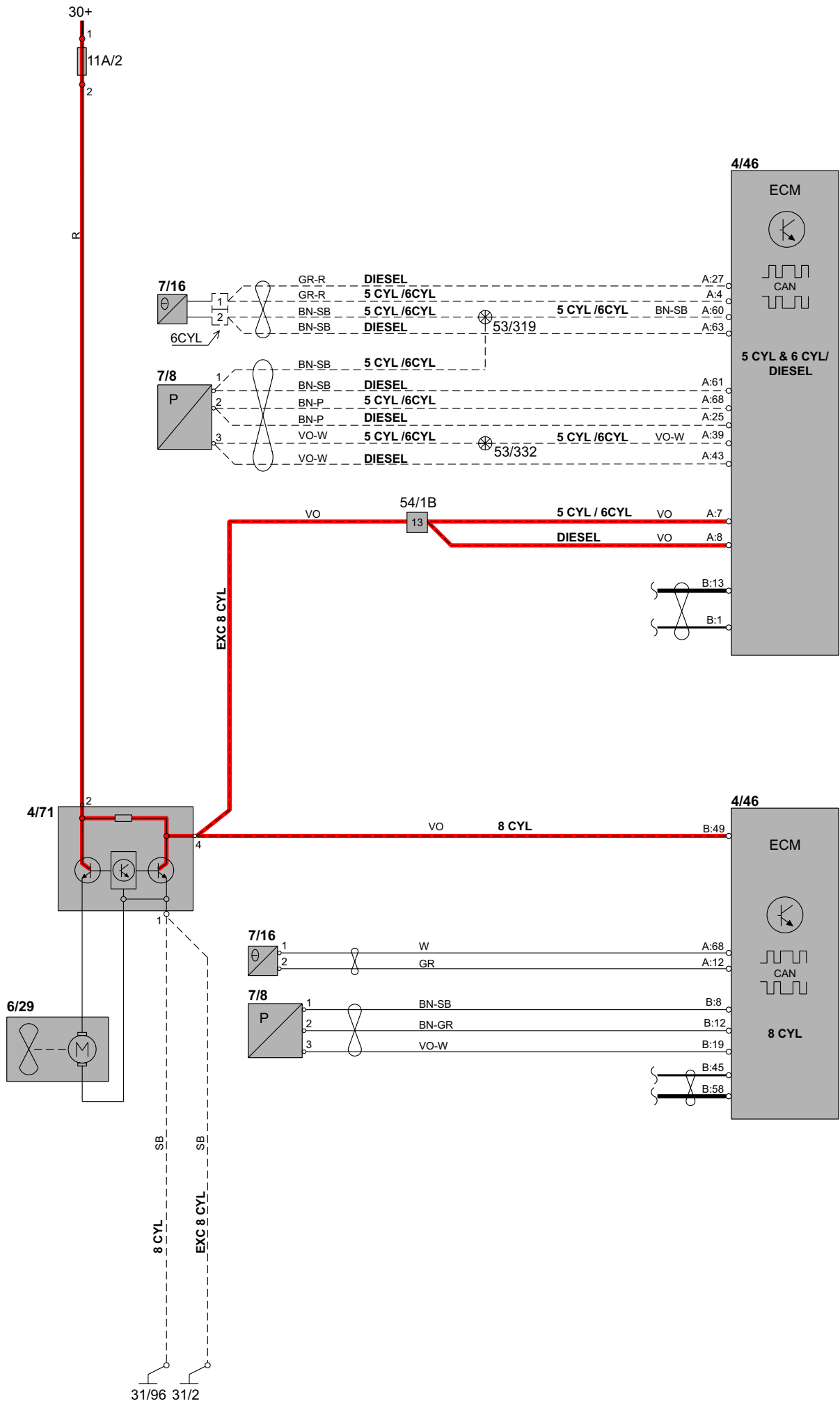
# Group 23 Fuel system

## Emission control 8-cyl. XC90



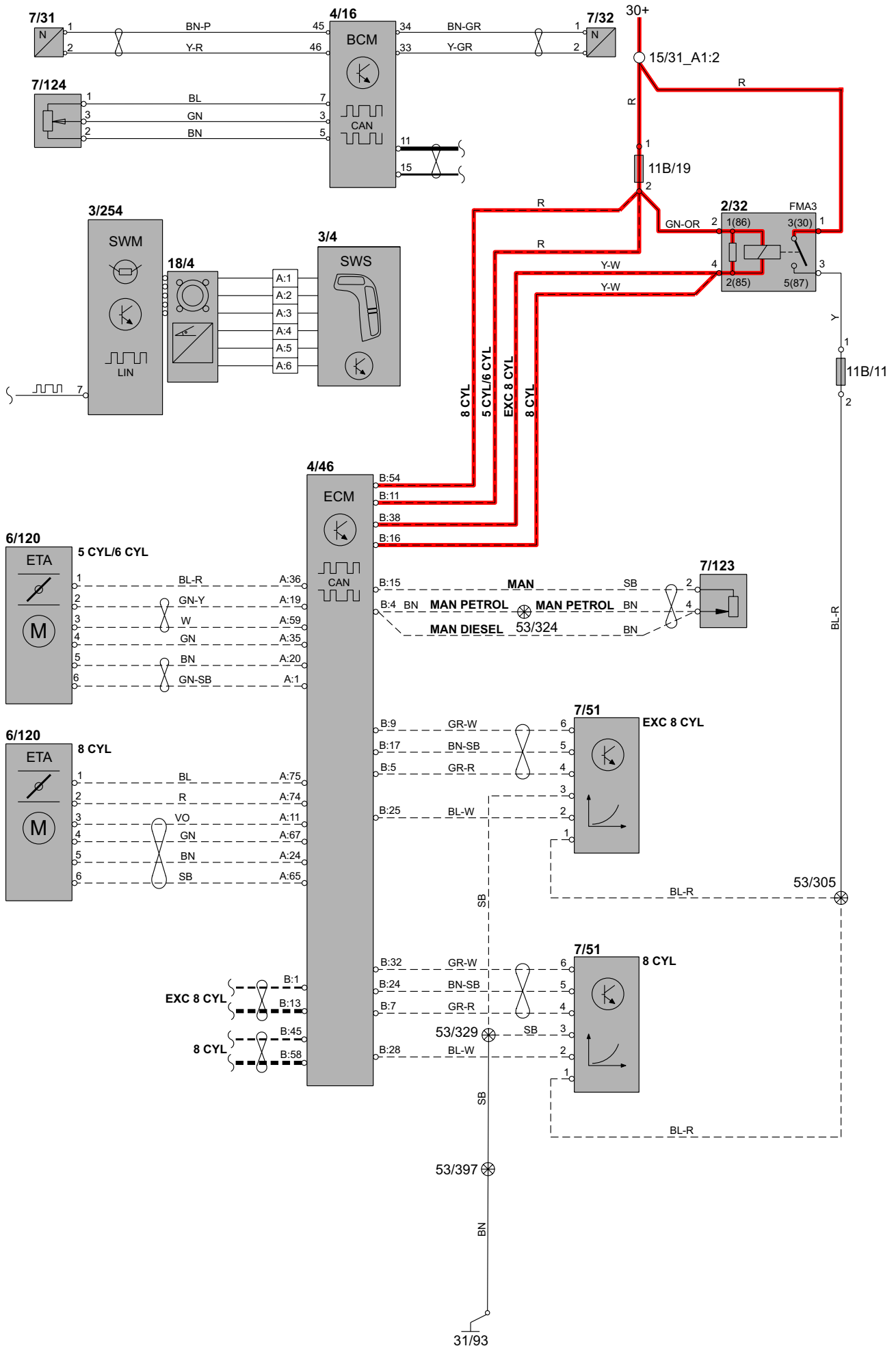
# Group 26 Cooling system

## Electric cooling fan XC90



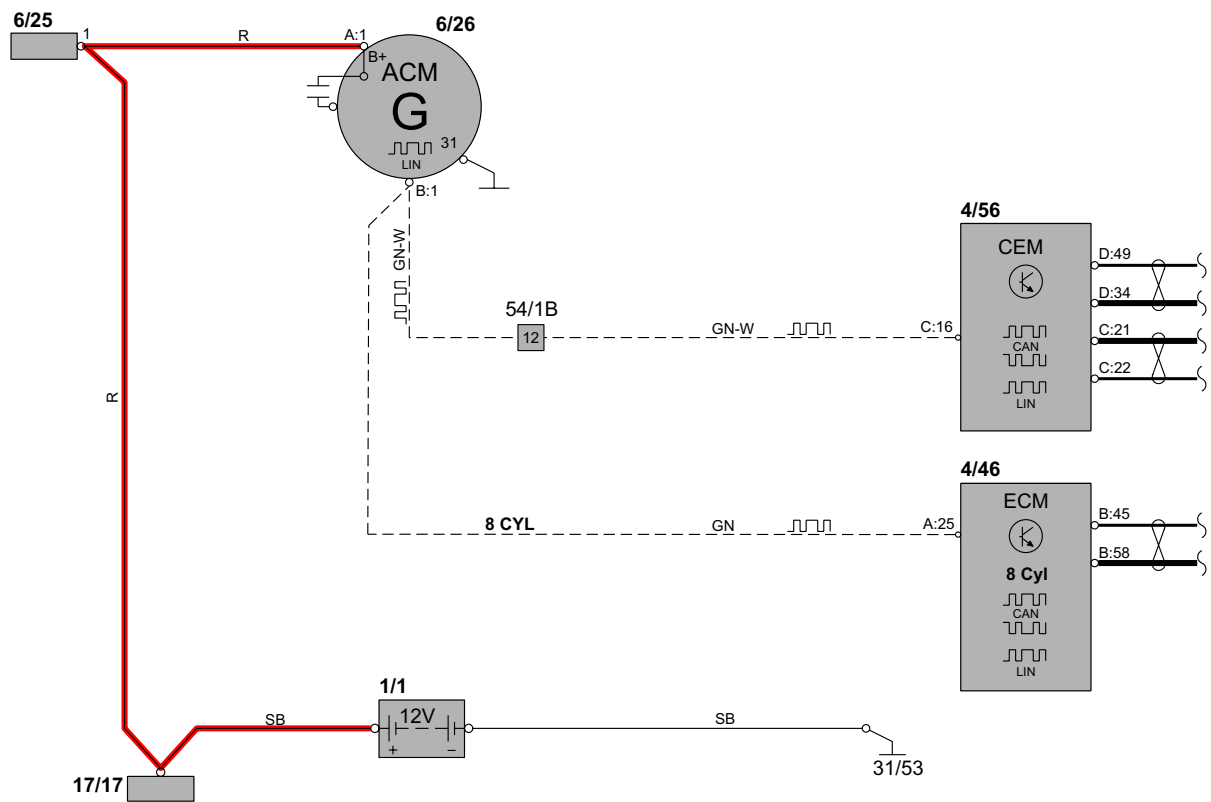
# Group 27 Engine control

## Cruise control XC90



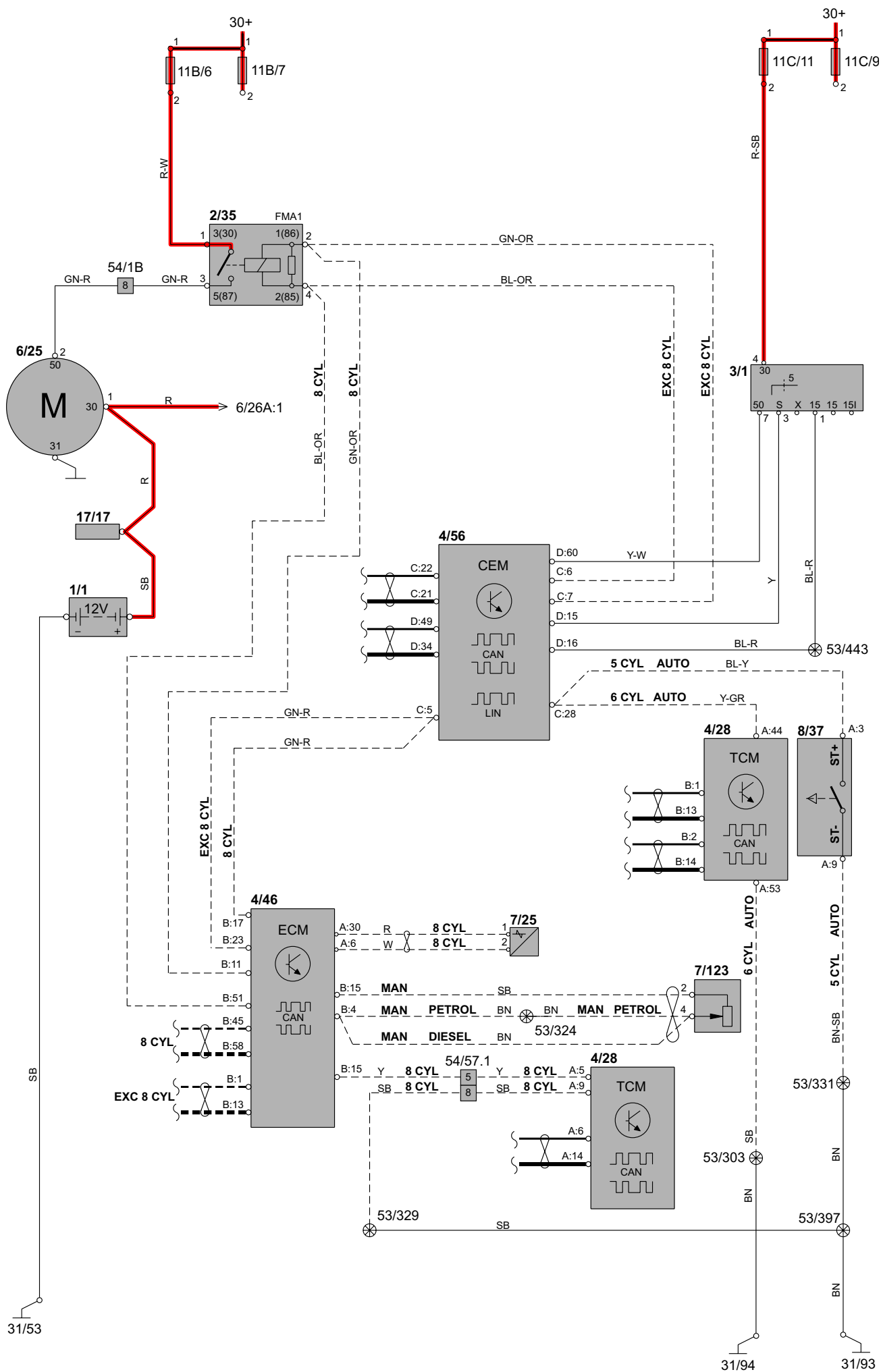
# Group 32 Generator and voltage regulator

## Power supply XC90



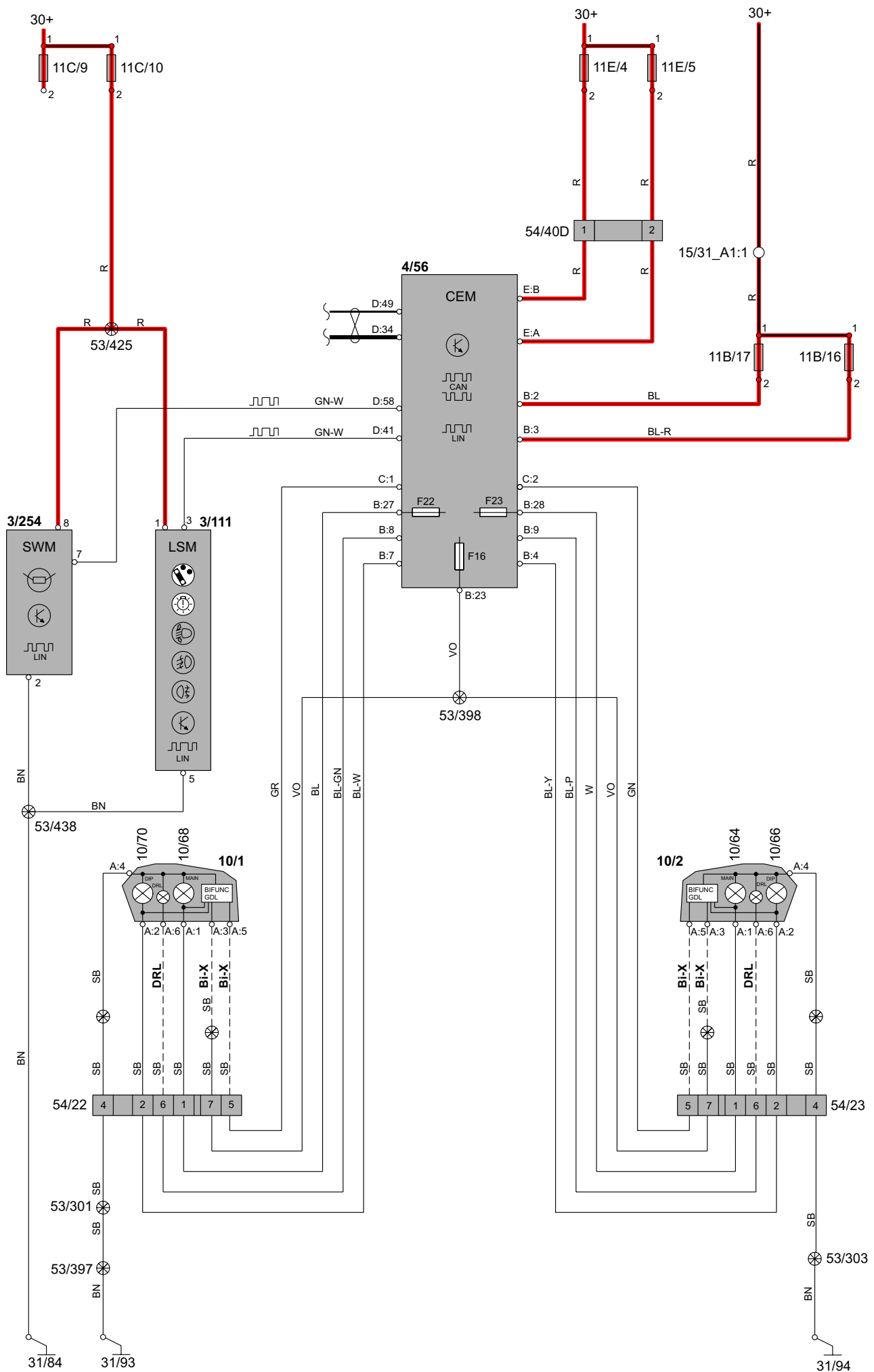
# Group 33 Starting system

## Starter system XC90



## Group 35 Lighting

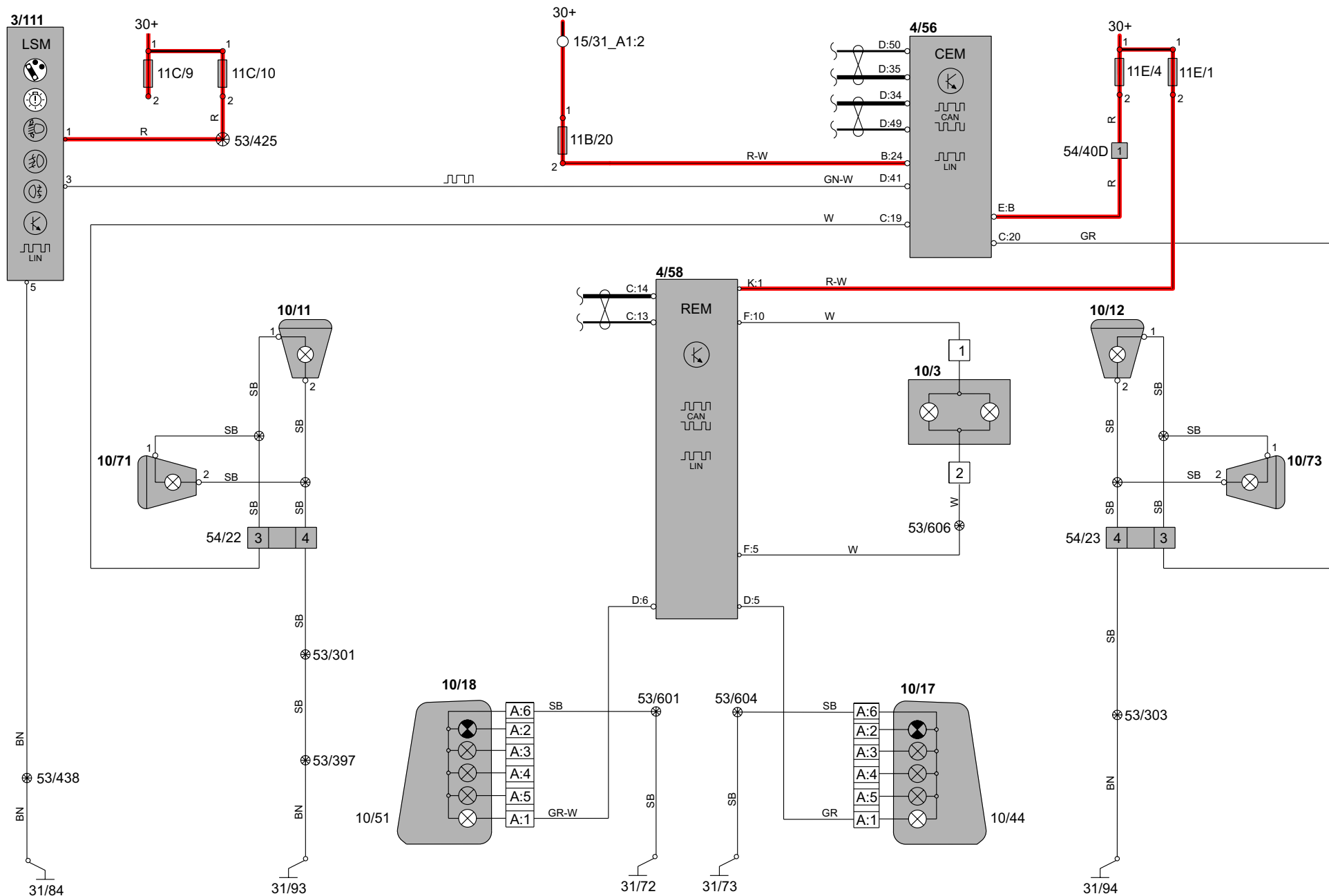
### High and low beams/Bi-Xenon & Daytime running lights XC90





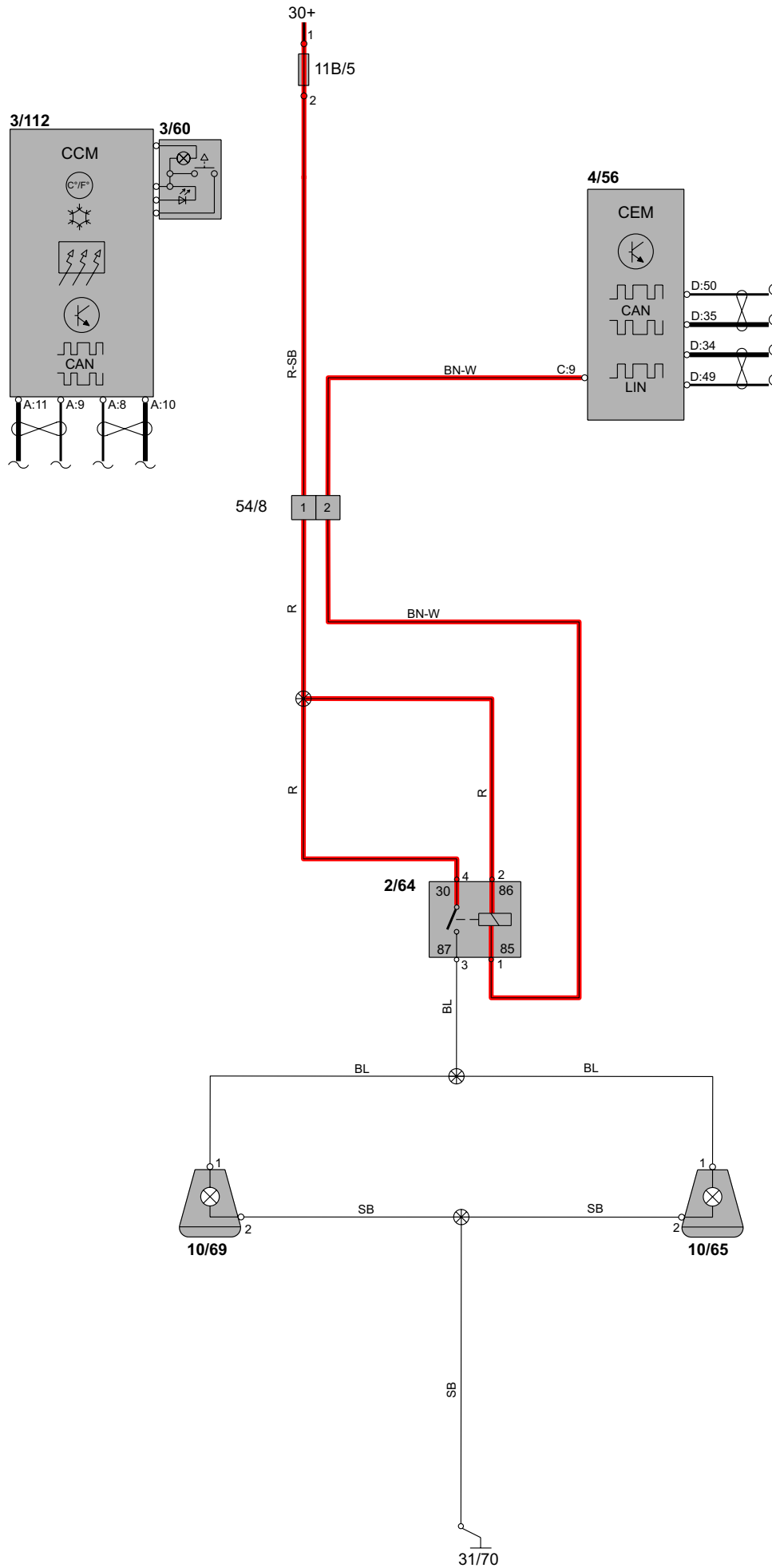
# Group 35 Lighting

## Position/parking lights, tail lights & license plate lighting XC90



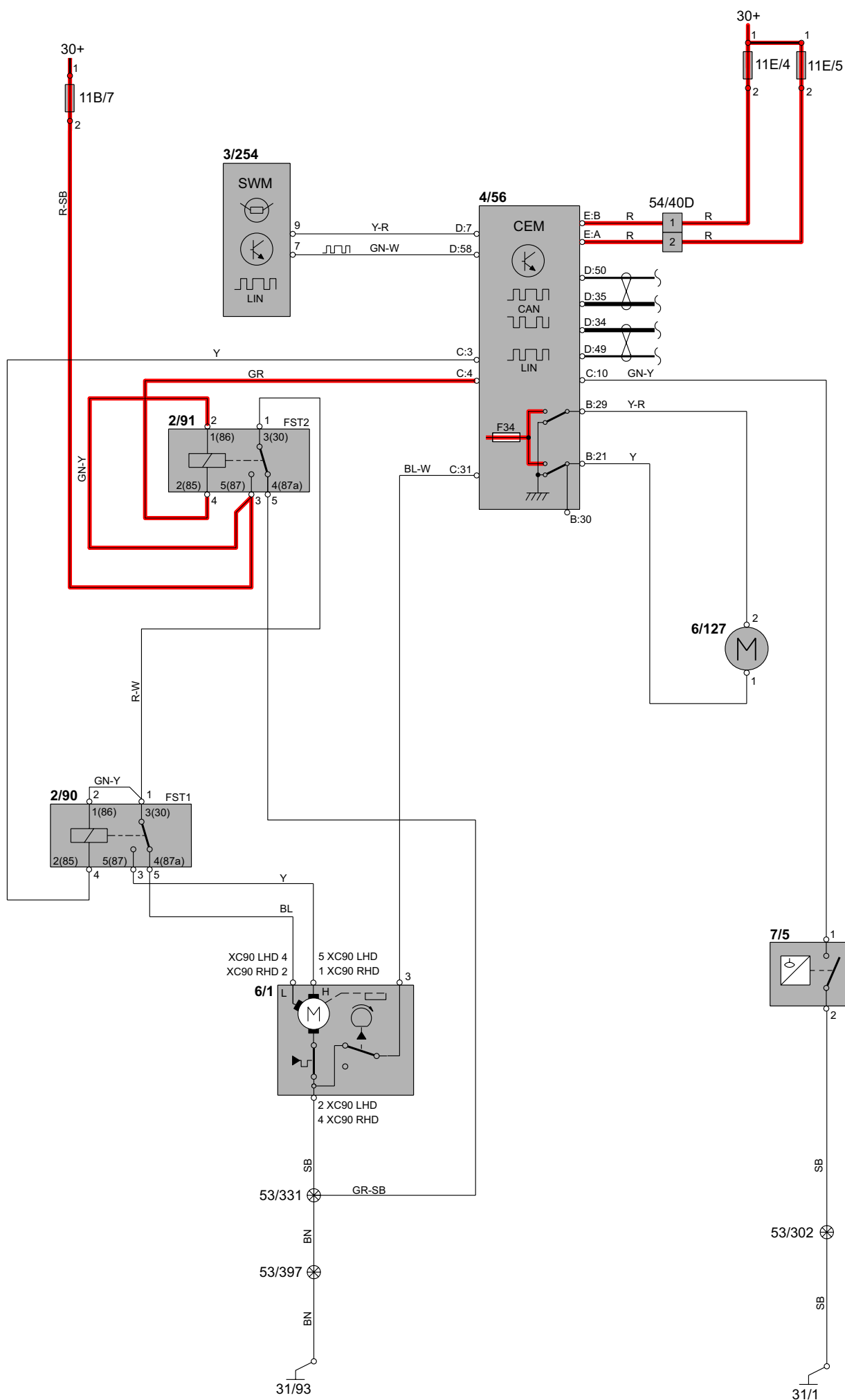
# Group 35 Lighting, Accessories

## Auxiliary lights XC90



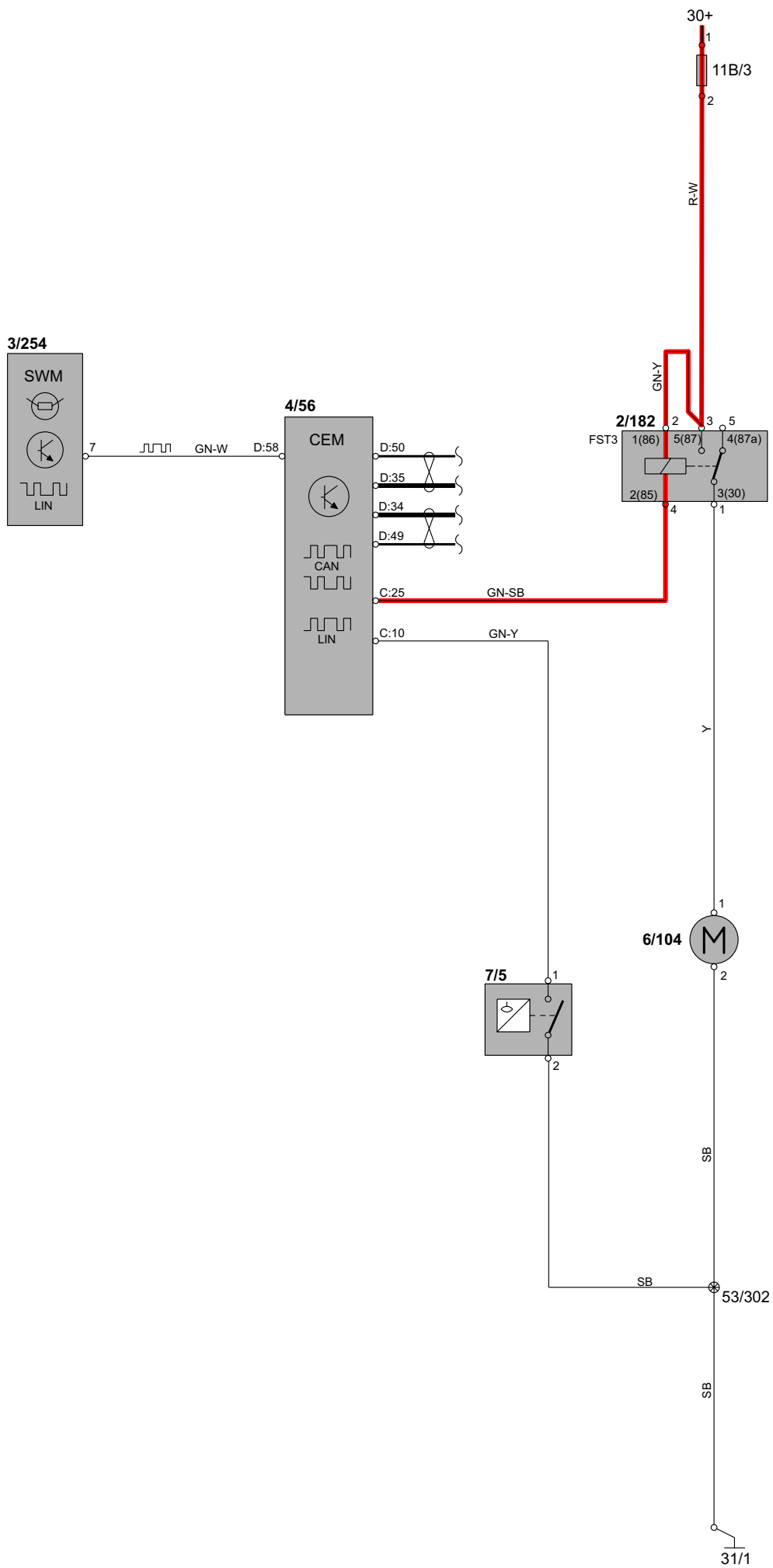
# Group 36 Additional electrical equipment

## Windshield wipers/washer XC90

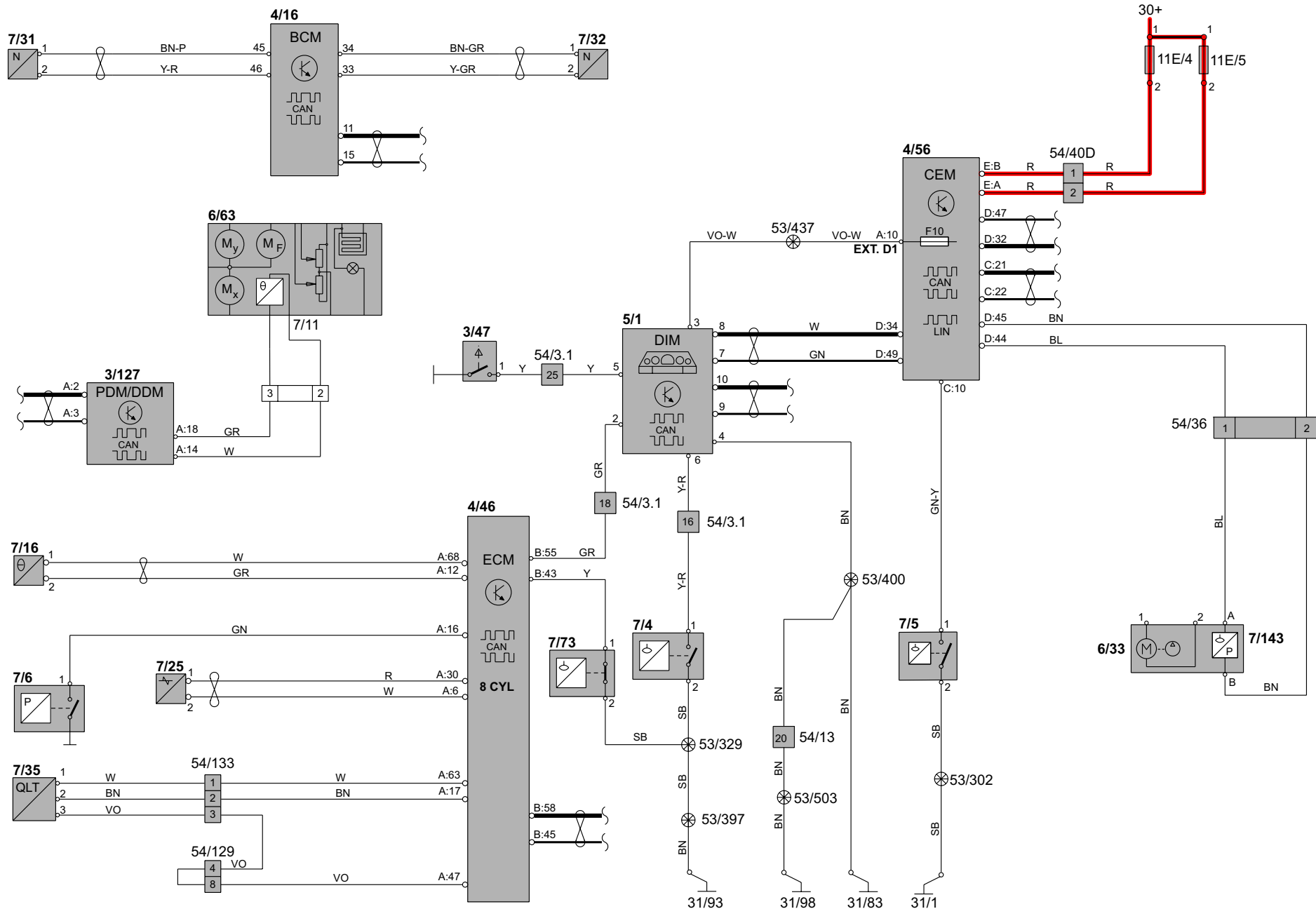


## Group 36 Additional electrical equipment

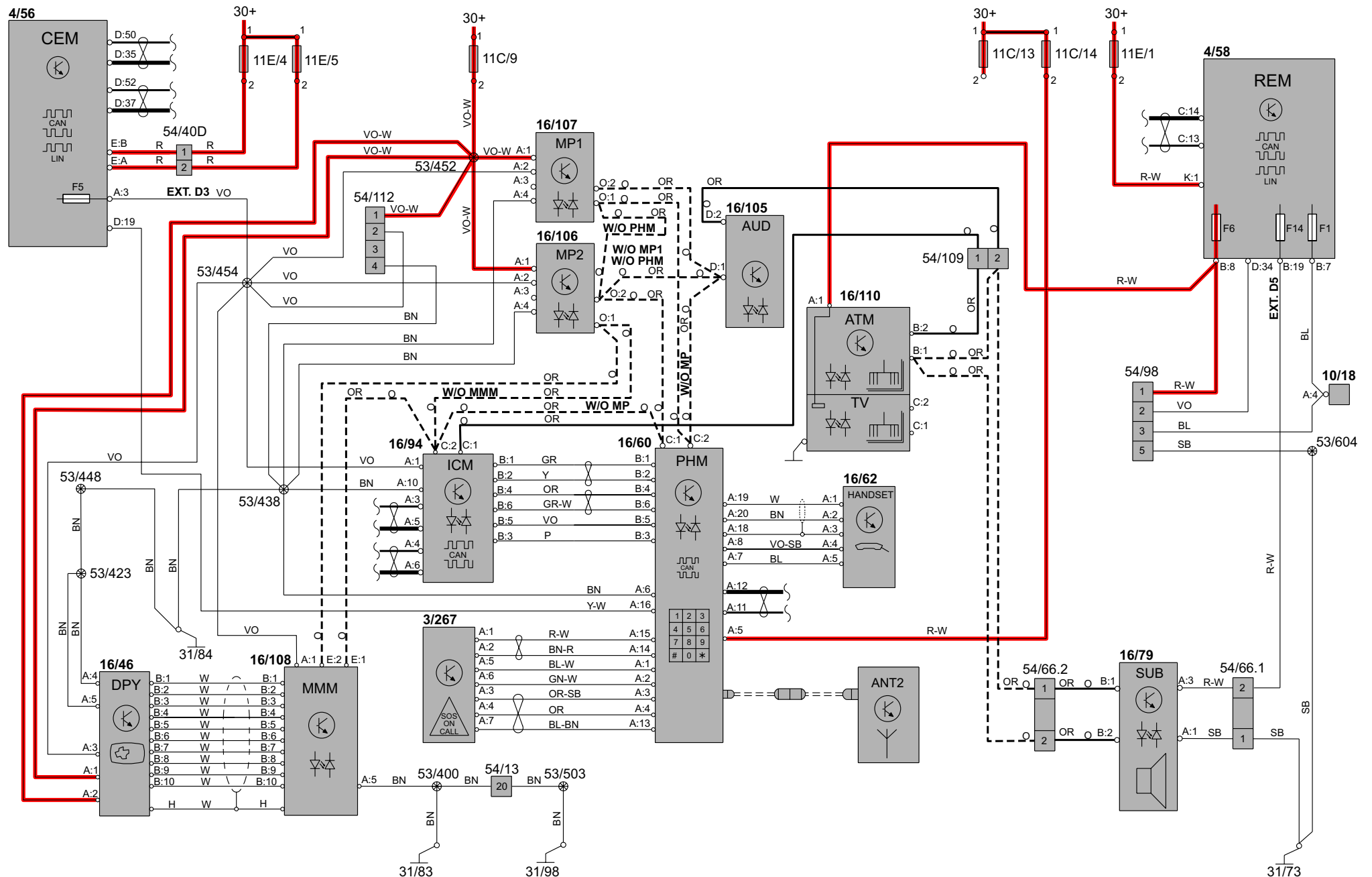
### High pressure headlight washer XC90



**Driver information module, 8-cyl. XC90**

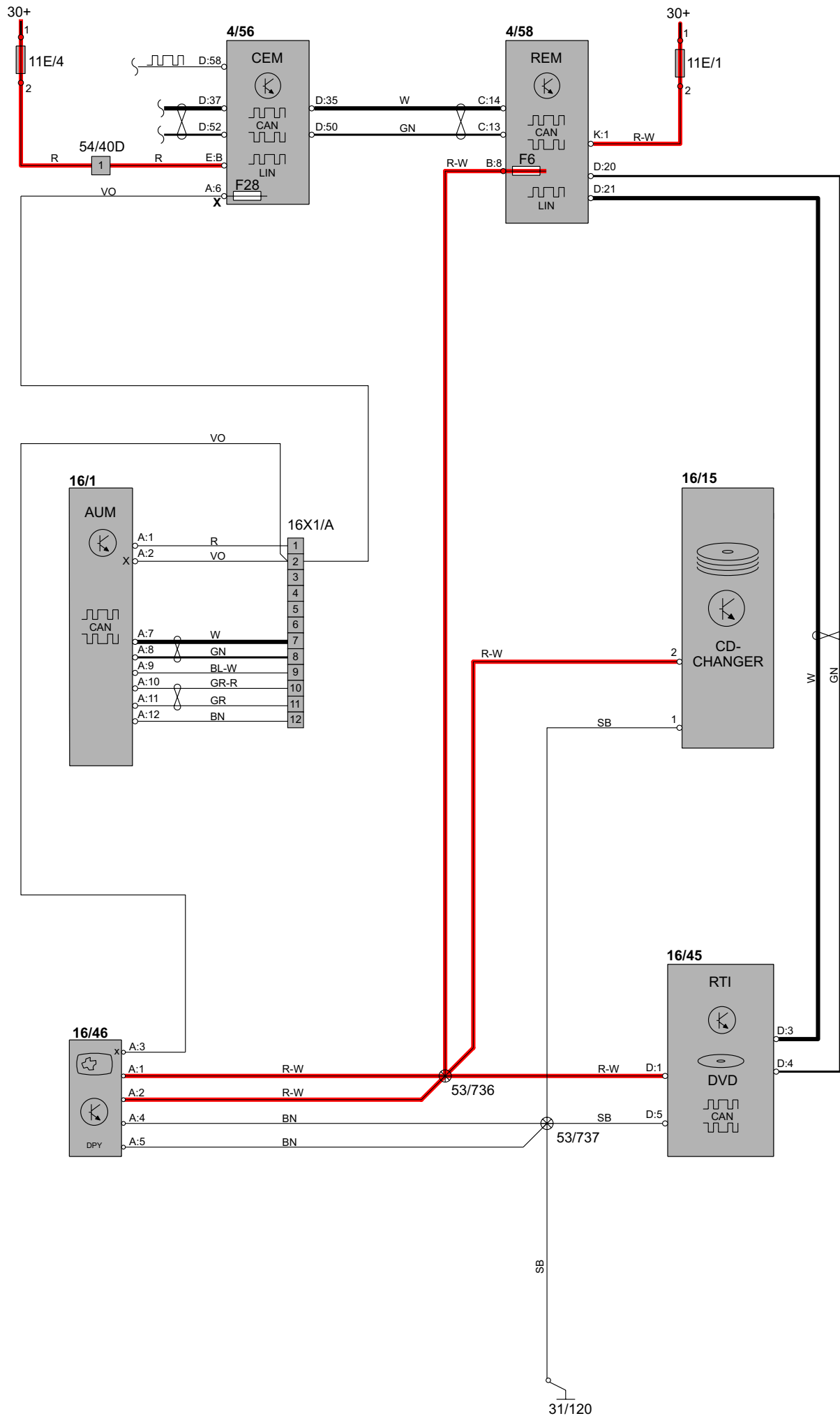


**Group 39 Other  
Infotainment XC90**



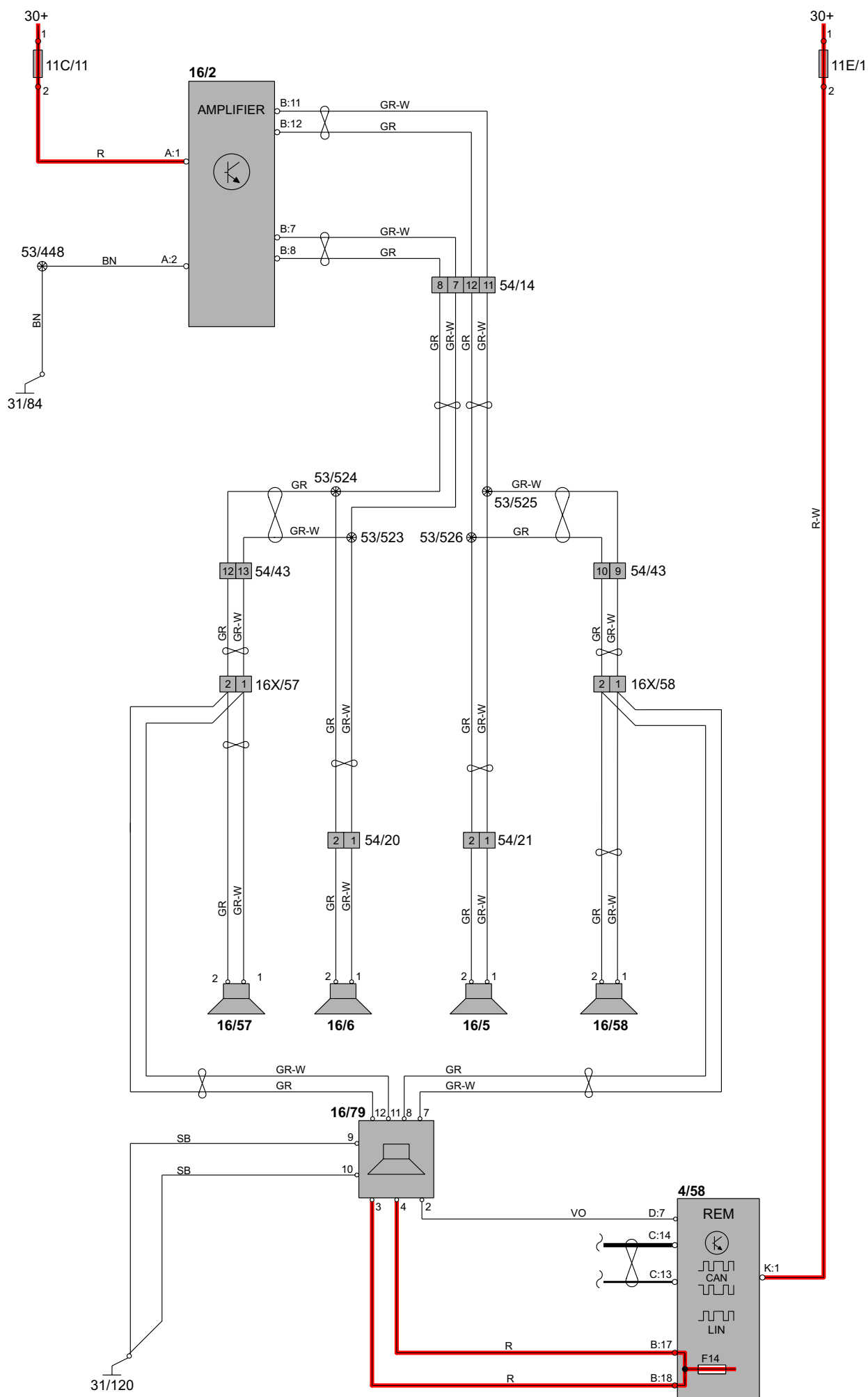
## Group 39 Other, Accessories

### Road Traffic Information (RTI) & CD changer S60/S80/V70



# Group 39 Other, Accessories

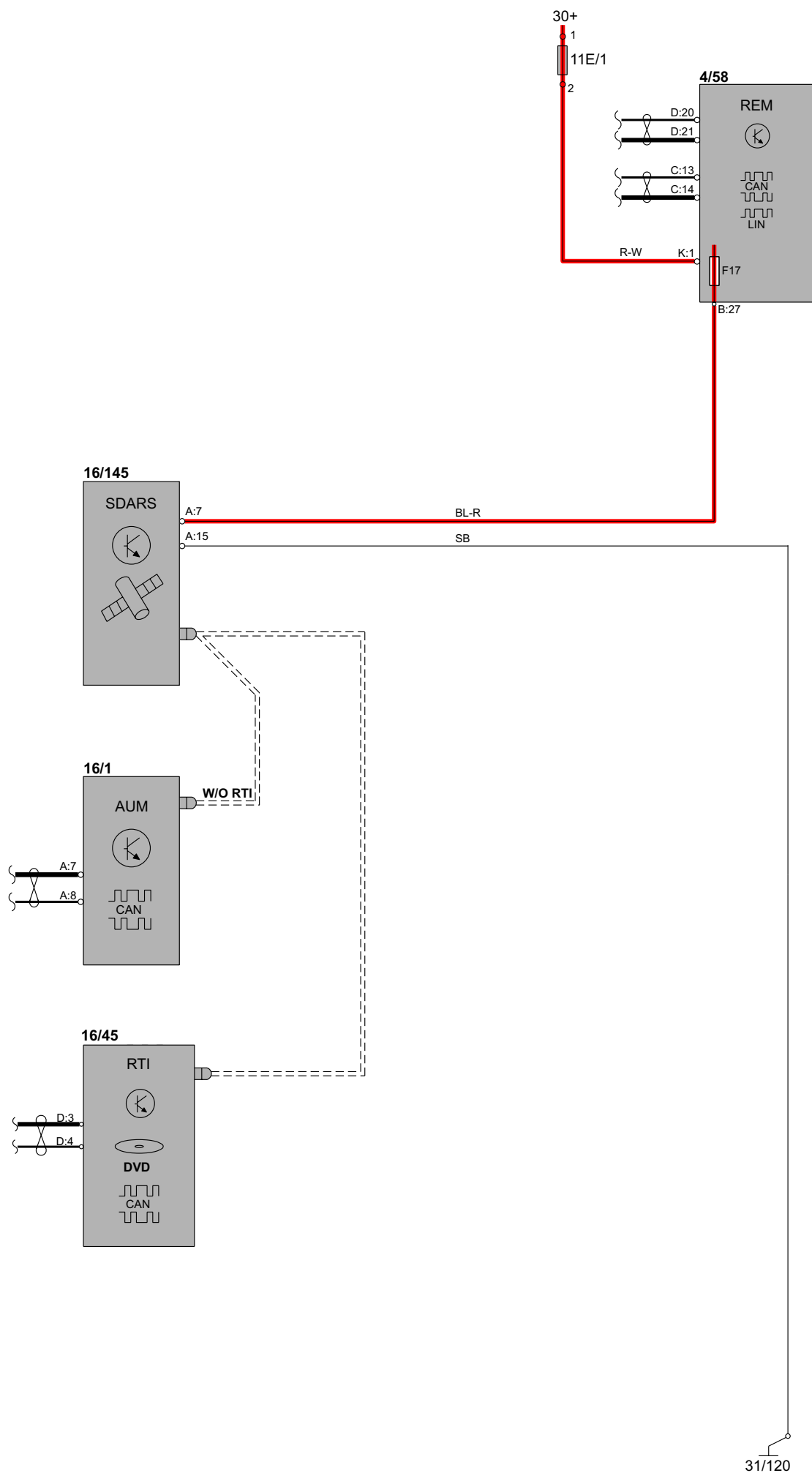
## Subwoofer V70





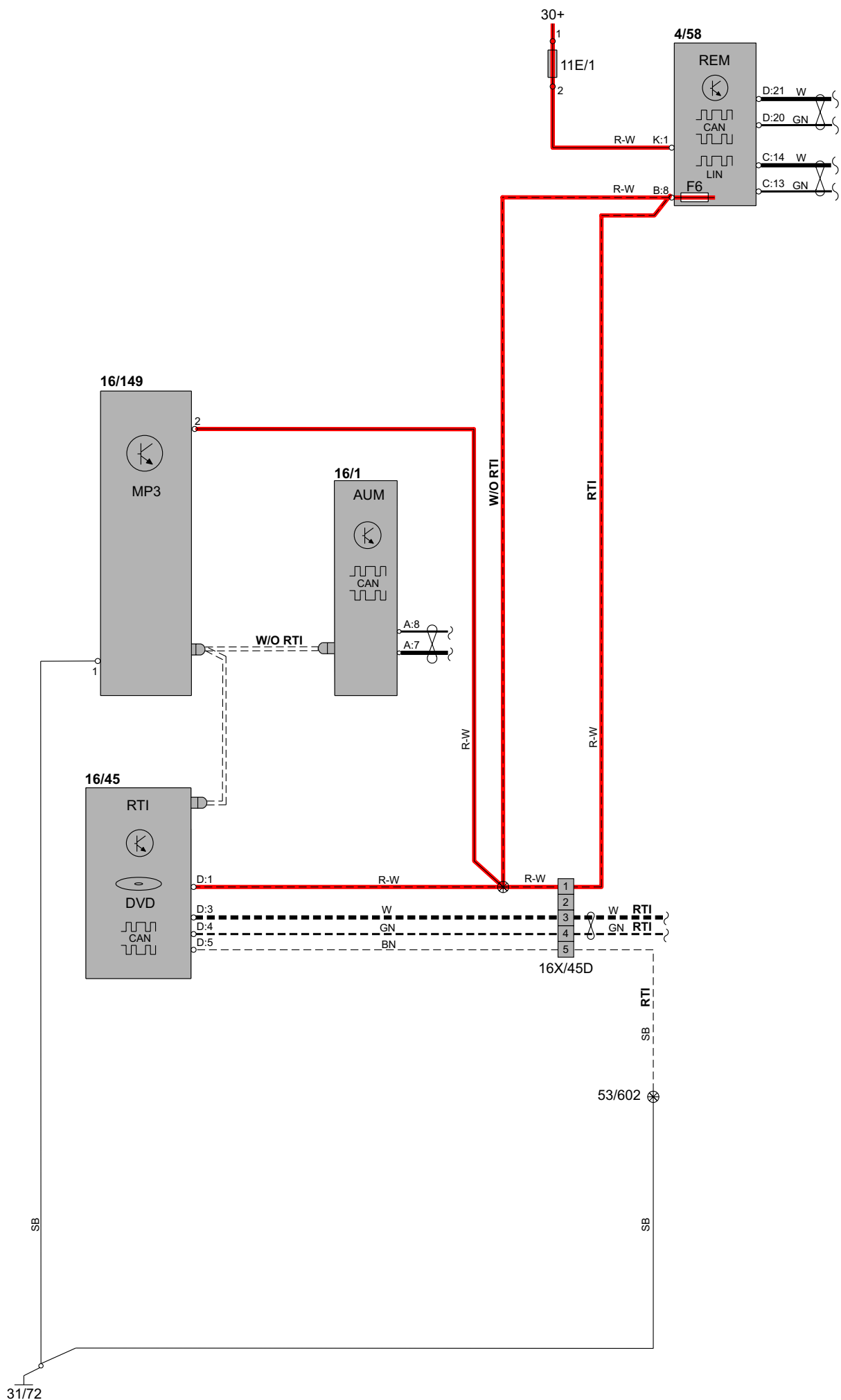
# Group 39 Other, Accessories

## Satellite radio S60/S80/V70

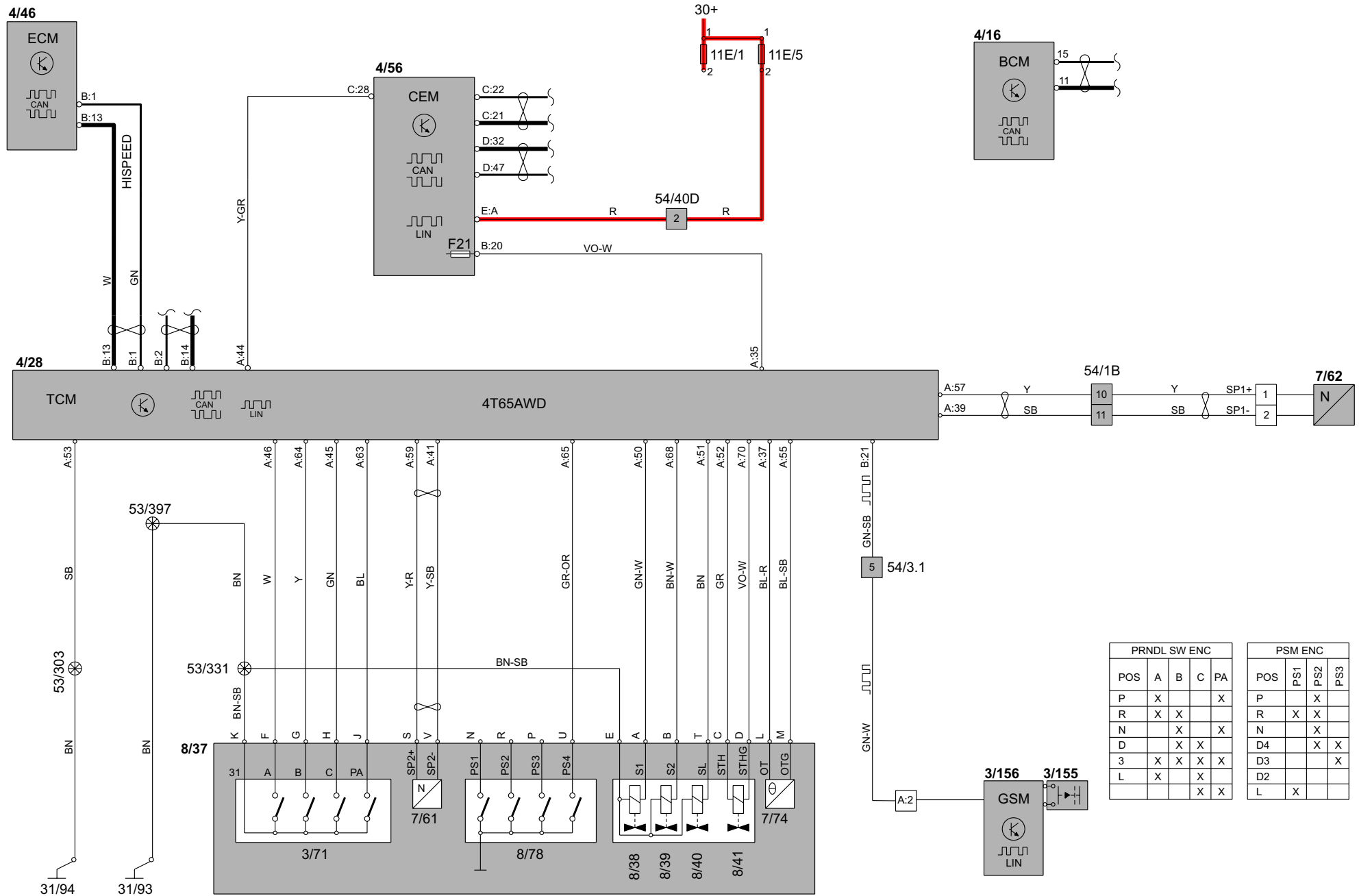


# Group 39 Other, Accessories

## MP3 player S60/S80/V70

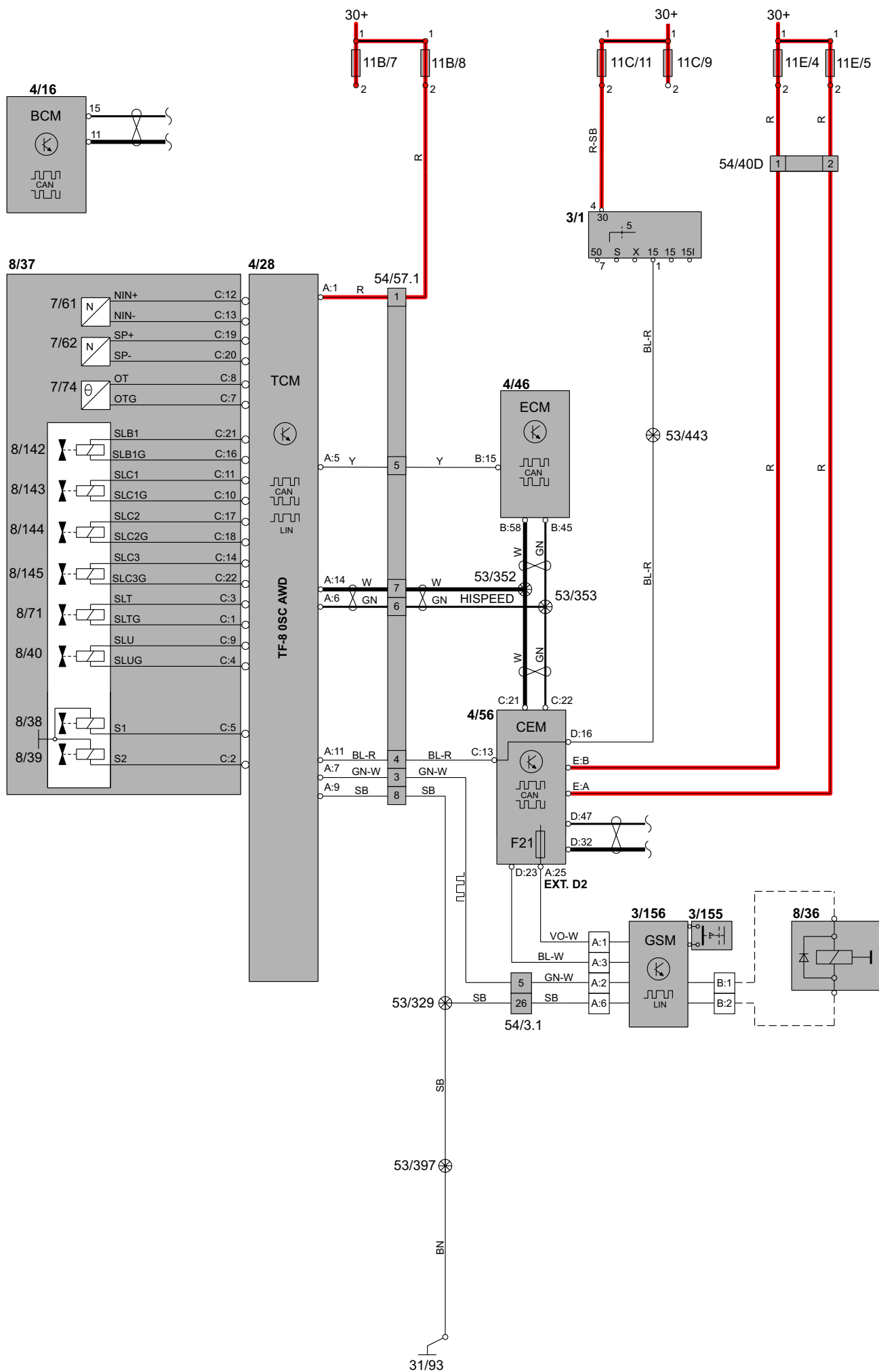


**Group 43 Transmission**  
**Automatic transmission 4T65AWD XC90**



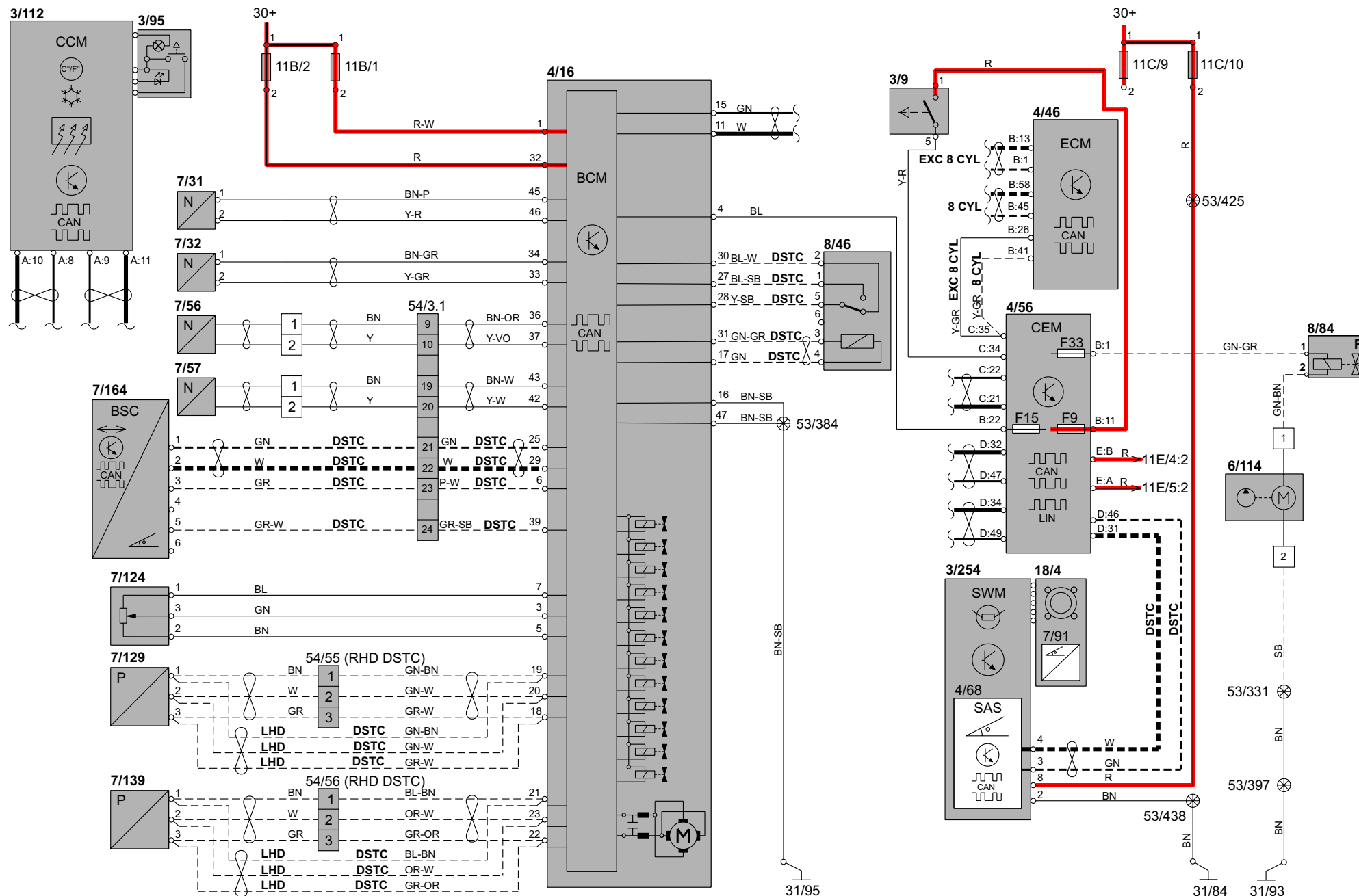
# Group 43 Transmission

## Automatic transmission TF-80SC AWD XC90

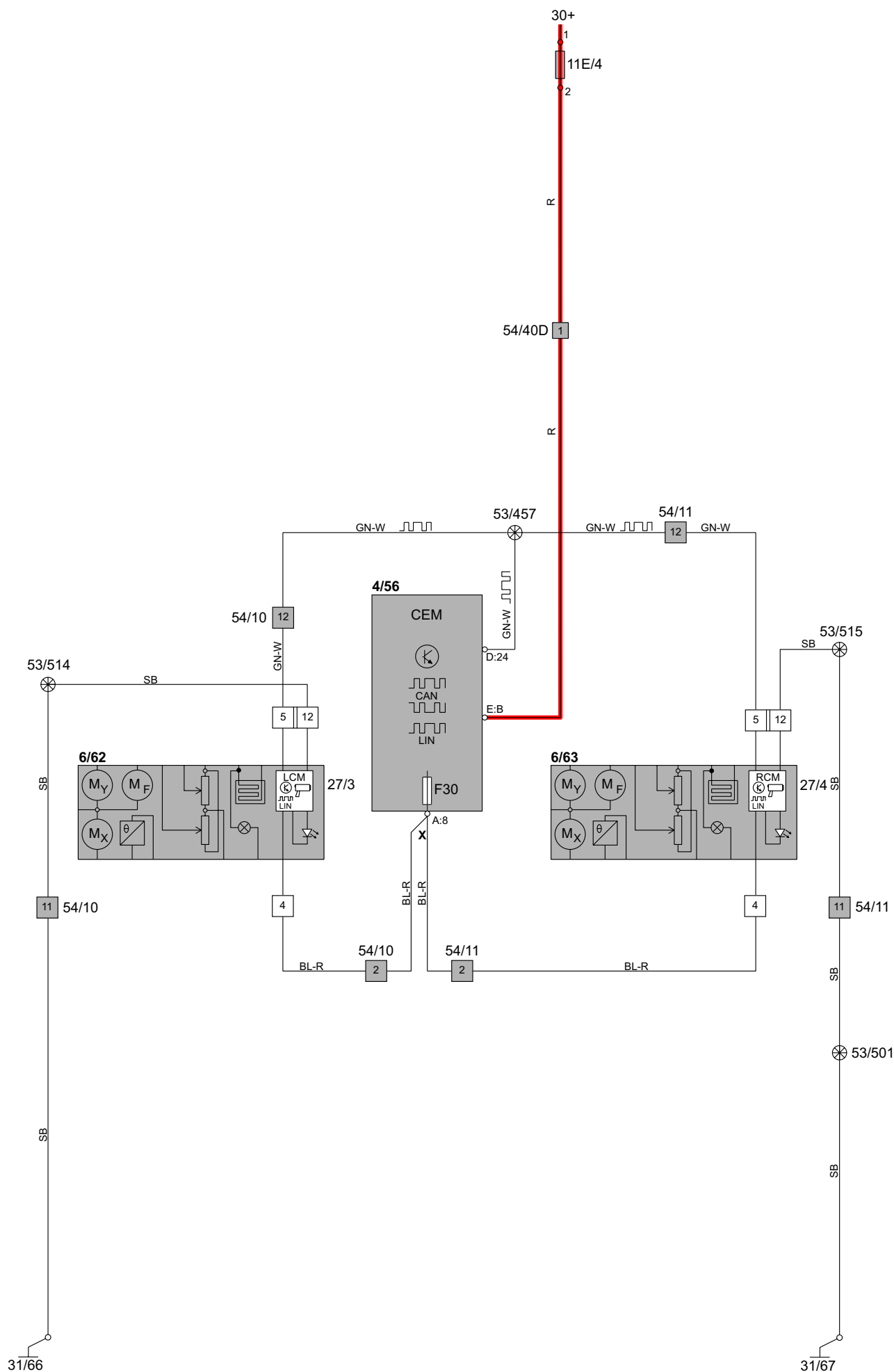


# Group 59 Brake system

## Brake control system XC90

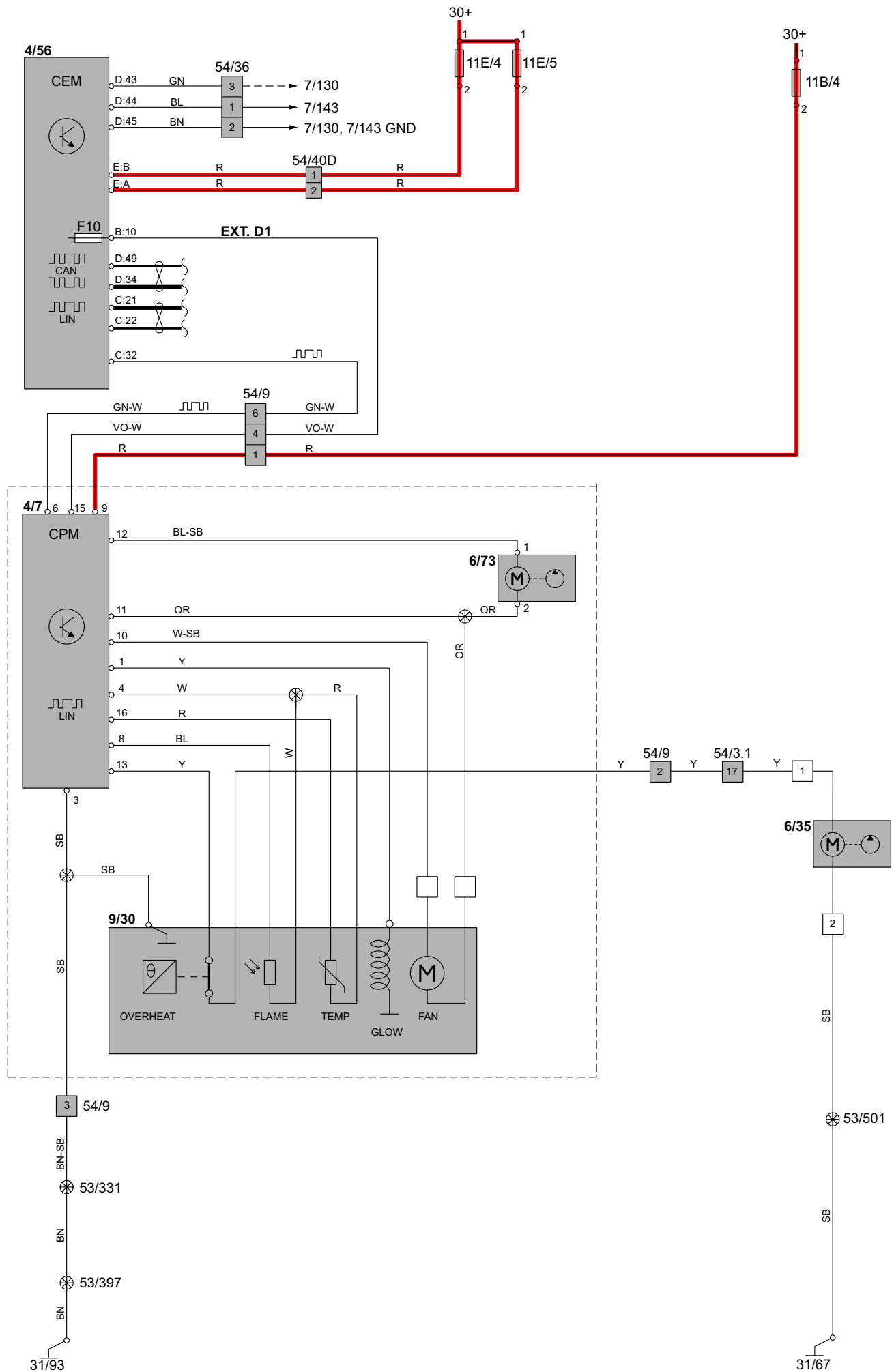


**Group 84 Exterior decorative elements etc.**  
**Power door mirrors with camera function**



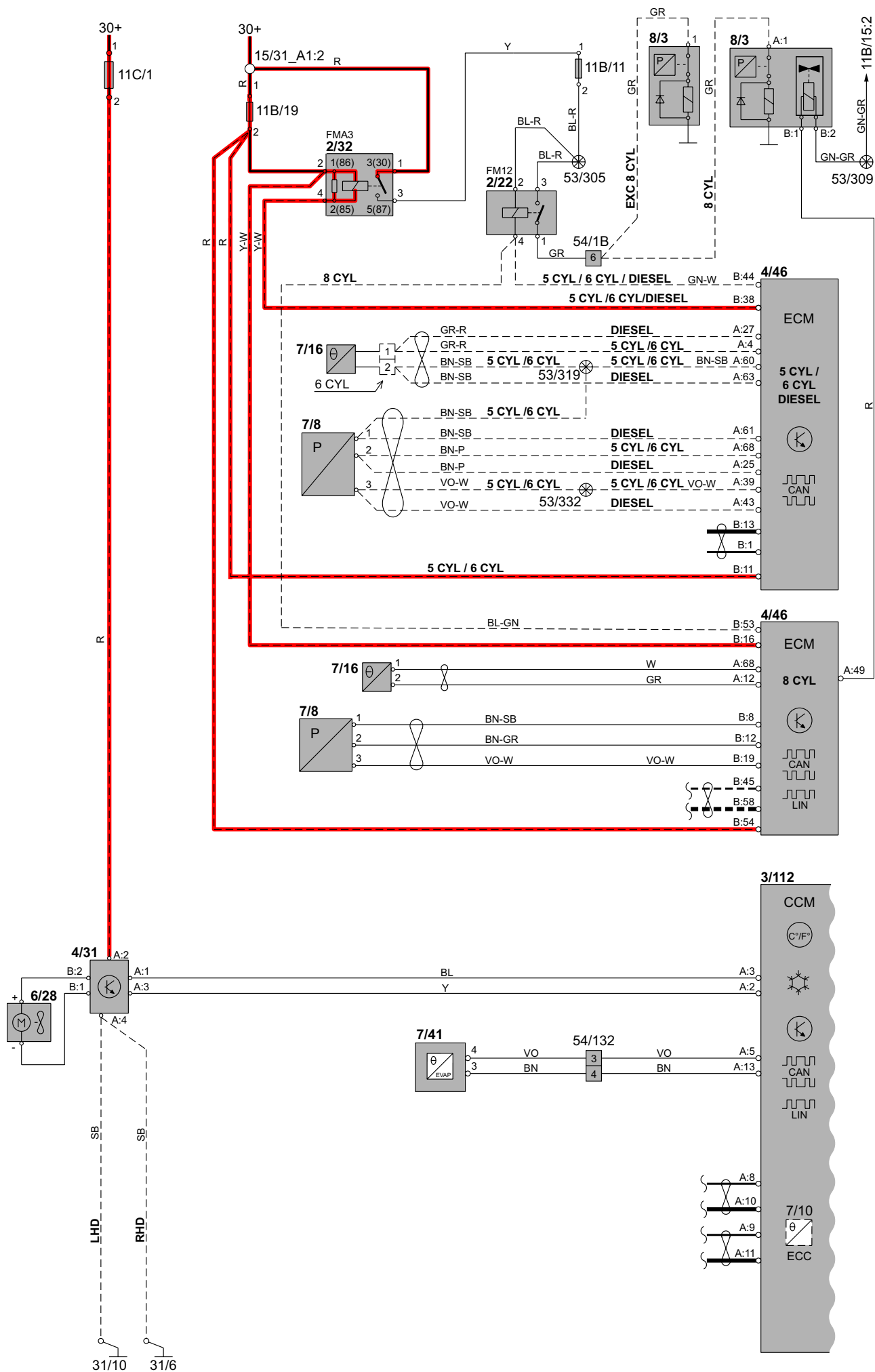
# Group 87 Climate controls

## Parking heater, auxiliary heater XC90



# Group 87 Climate controls

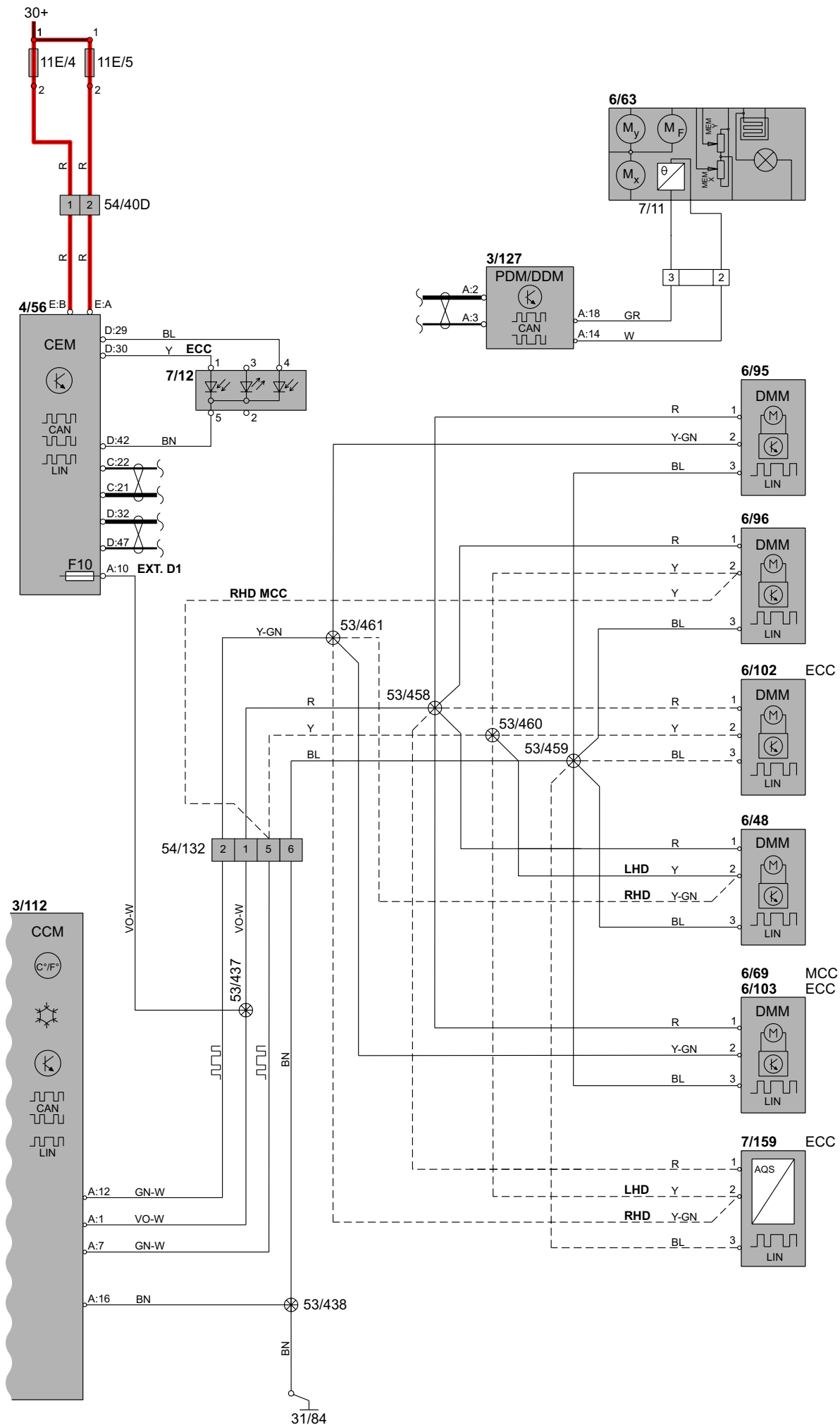
## Climate control system XC90 1:2





# Group 87 Climate controls

## Climate control system XC90 2:2



## Connectors

### 54/1B - 54/57.1

#### 54/1B 14-pin gray

| No. | Engine harness               |  |                   | Engine compartment harness |  |                |
|-----|------------------------------|--|-------------------|----------------------------|--|----------------|
| 1   | -                            |  | -                 | -                          |  | -              |
| 2   | 53/315<br>7/17:4<br>54/99:11 | Junction point, 5 & 6-cyl.<br>Mass airflow sensor (MAF), Diesel<br>Connector, 8-cyl.                     | GN                | 11B/12:2<br><br>11B/12:2   | Fuses in engine compartment fuse box<br><br>Fuses in engine compartment fuse box | GN-R<br><br>GN |
| 3   | 54/129:5<br>53/309<br>53/335 | Connector, 8-cyl.<br>Junction point<br>Junction point, Diesel  | GN-GR<br><br>GN-W | 53/396<br>11B/15:2         | Junction point<br>Fuses in engine compartment fuse box                           | GN-GR          |
| 4   | -                            |  | -                 | -                          |  | -              |
| 5   | 53/328                       | Junction point   | GN-W              | 11B/10:2                   | Fuses in engine compartment fuse box   | GN-W           |
| 6   | 8/3:1<br>8/3A:1              | Electromagnetic clutch, climate control system<br>Electromagnetic clutch, climate control system, 8-cyl. | GR                | 2/22:1                     | Relay, climate control system  | GR             |
| 7   | 53/304<br>53/373             | Junction point<br>Junction point, Diesel   | GN-BN<br><br>R    | 11B/14:2<br>11B/10         | Fuses in engine compartment fuse box<br>Fuses in engine compartment fuse box     | GN-BN<br><br>R |
| 8   | 6/25:2                       | Starter motor  | GN-R              | 2/35:3                     | Starter motor relay  | GN-R           |
| 9   | -                            |  | -                 | -                          |  | -              |
| 10  | 7/62:1                       | Output speed sensor  | Y                 | 4/28A:57                   | Transmission Control Module (TCM)  | Y              |
| 11  | 7/62:2                       | Output speed sensor  | SB                | 4/28A:36                   | Transmission Control Module (TCM)  | SB             |
| 12  | 6/26B:1                      | Alternator Control Module (ACM)  | GN-W              | 4/56C:16                   | Central Electronic Module (CEM)  | GN-W           |
| 13  | 4/71:4                       | Cooling fan control module   | VO                | 4/46A:7<br>4/46A:8         | Engine Control Module (ECM)<br>Engine Control Module (ECM), Diesel               | VO             |
| 14  | -                            |  | -                 | -                          |  | -              |

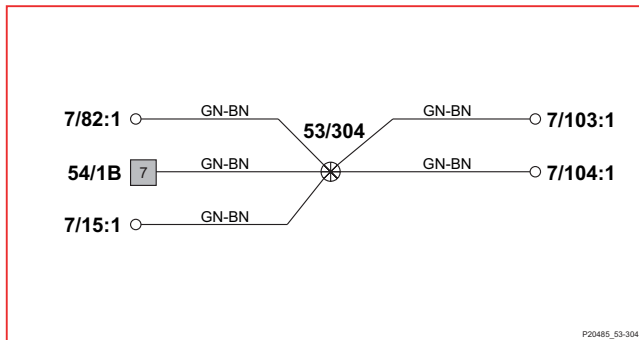
#### 54/57.1 8-pin gray

| No. | Automatic transmission harness |                                   |      | Engine compartment harness |                                      |      |
|-----|--------------------------------|-----------------------------------|------|----------------------------|--------------------------------------|------|
| 1   | 4/28A:1                        | Transmission Control Module (TCM) | R    | 11B/8:2                    | Fuses in engine compartment fuse box | R    |
| 2   | -                              |                                   | -    | -                          |                                      | -    |
| 3   | 4/28A:7                        | Transmission Control Module (TCM) | GN-W | 54/3.1:5                   | Connector                            | GN-W |
| 4   | 4/28A:11                       | Transmission Control Module (TCM) | BL-R | 4/56C:13                   | Central Electronic Module (CEM)      | BL-R |
| 5   | 4/28A:5                        | Transmission Control Module (TCM) | Y    | 4/56B:15                   | Central Electronic Module (CEM)      | Y    |
| 6   | 4/28A:6                        | Transmission Control Module (TCM) | GN   | 53/353                     | Junction point                       | GN   |
| 7   | 4/28A:14                       | Transmission Control Module (TCM) | W    | 53/352                     | Junction point                       | W    |
| 8   | 4/28A:9                        | Transmission Control Module (TCM) | SB   | 53/329                     | Junction point                       | SB   |

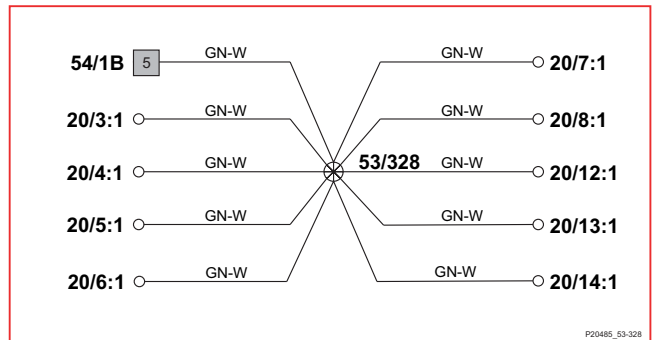
# Junction points

## 53/304 - 53/353

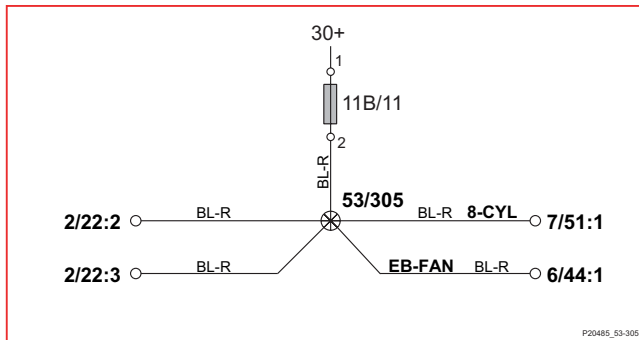
53/304 8-cyl.



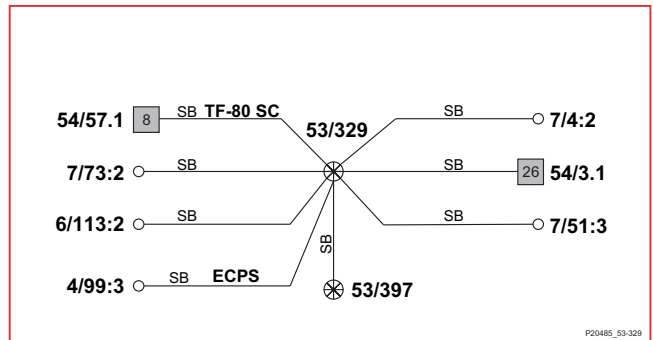
53/328 8-cyl.



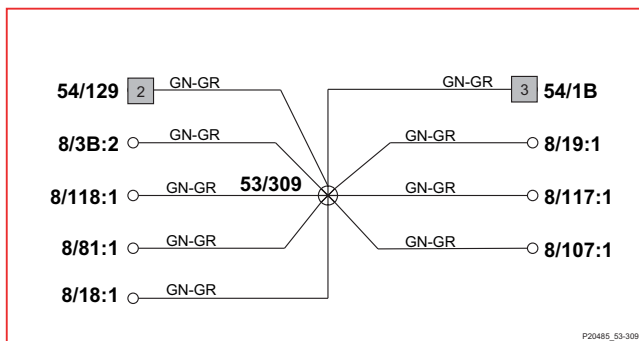
53/305



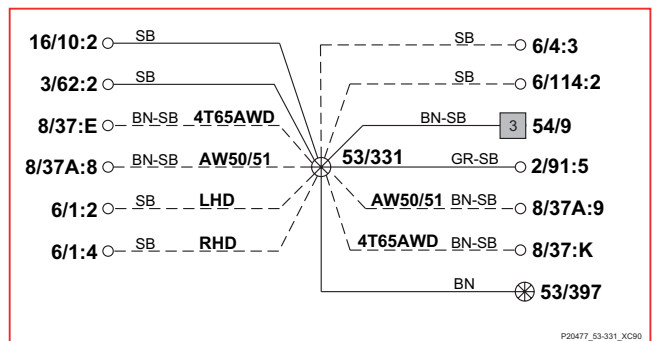
53/329



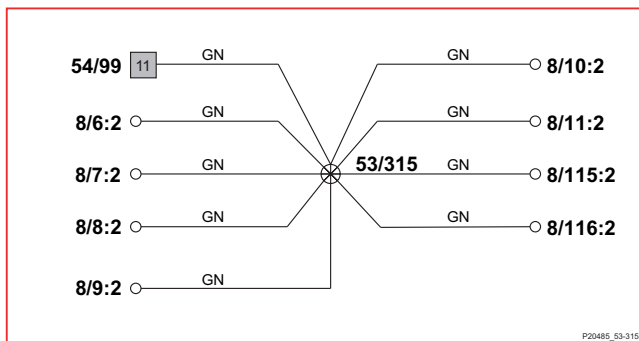
53/309 8-cyl.



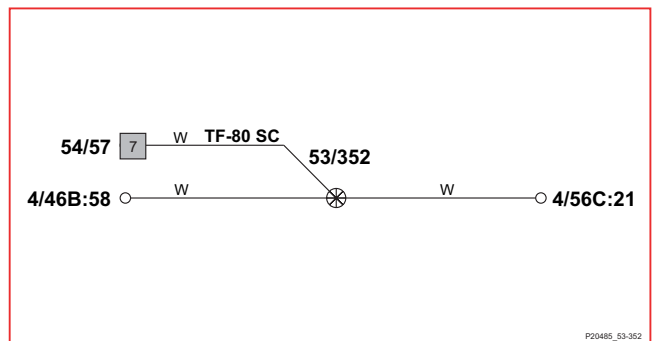
53/331



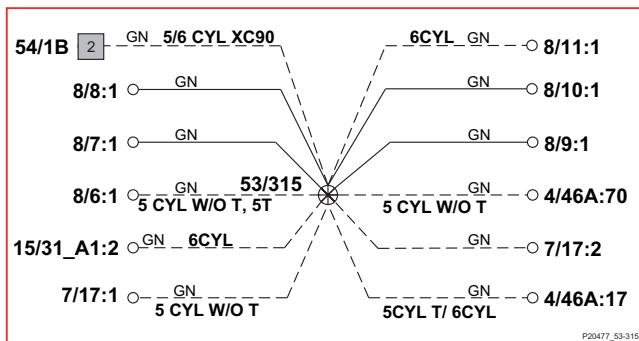
53/315 8-cyl.



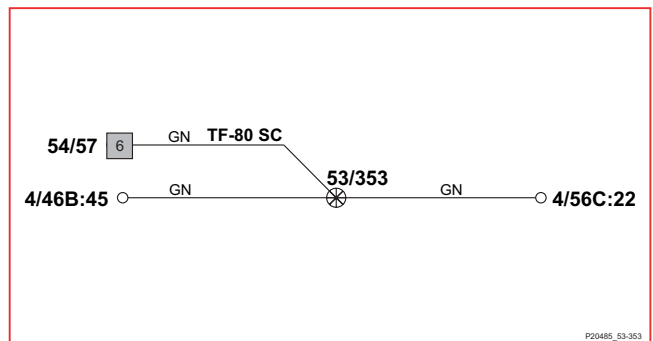
53/352



53/315



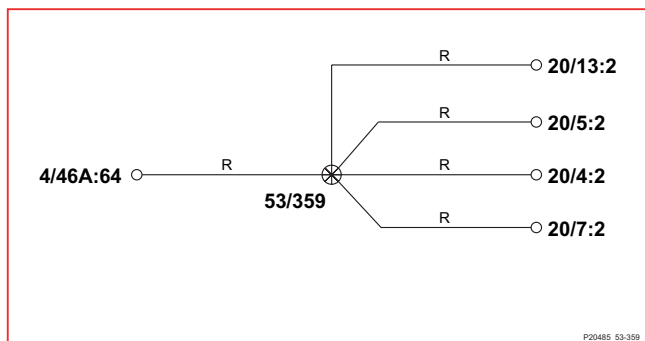
53/353



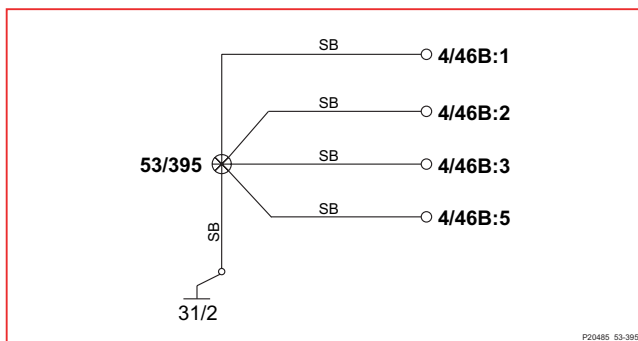
# Junction points

## 53/359 - 53/514

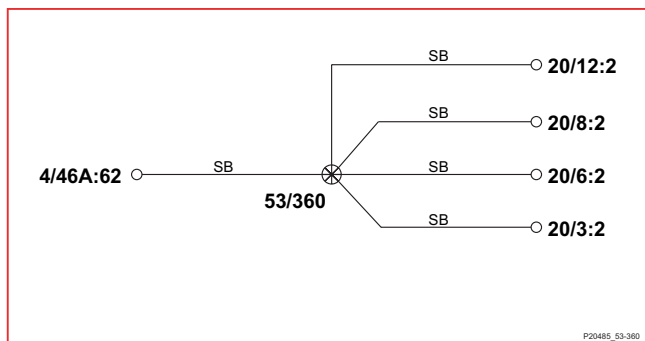
53/359 8-cyl.



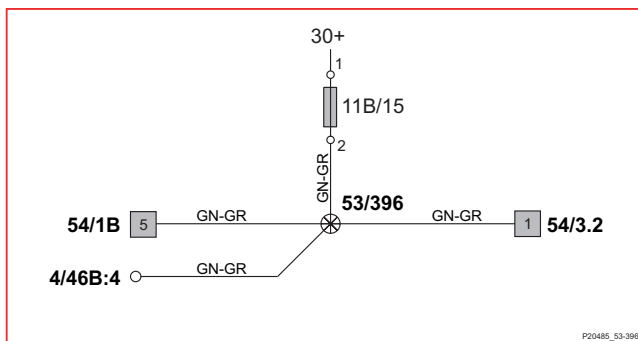
53/395 8-cyl.



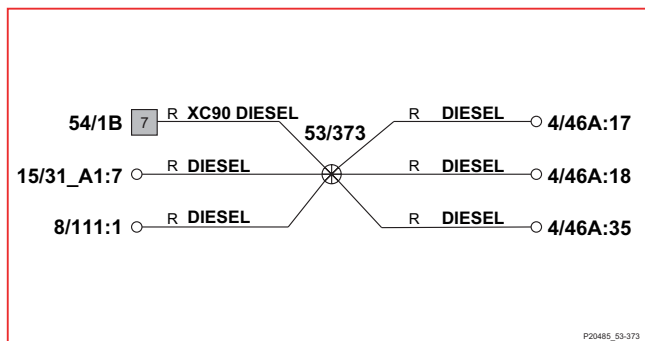
53/360 8-cyl.



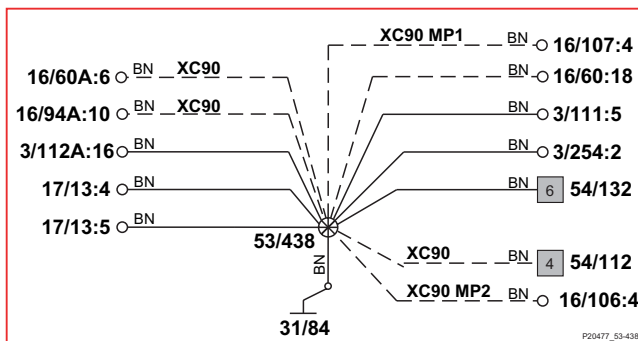
53/396 8-cyl.



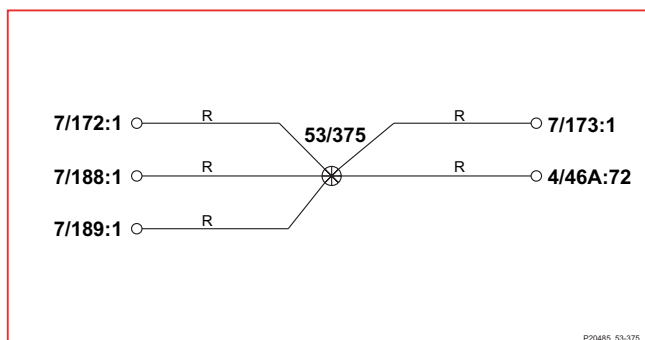
53/373



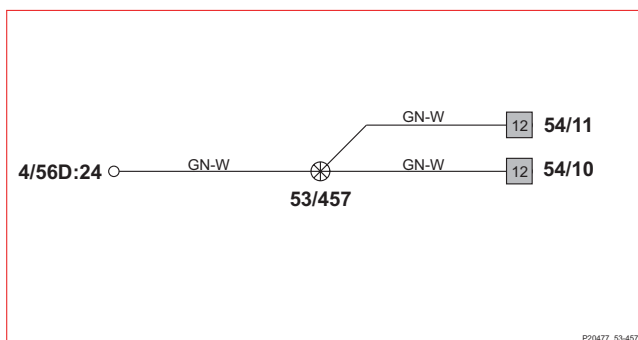
53/438



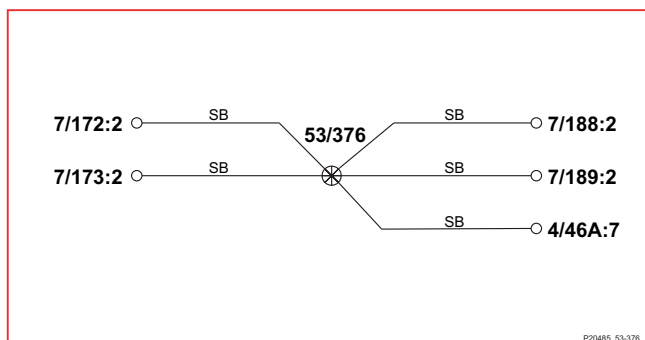
53/375 8-cyl.



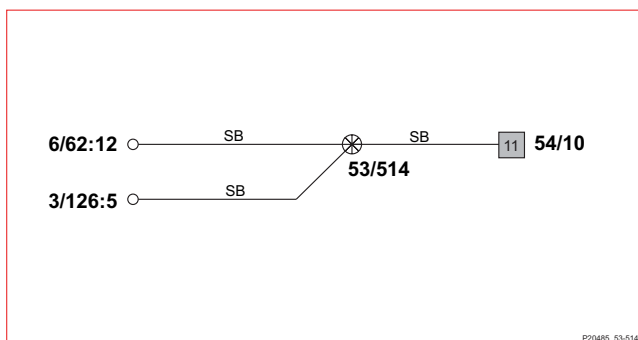
53/457 BLIS



53/376 8-cyl.



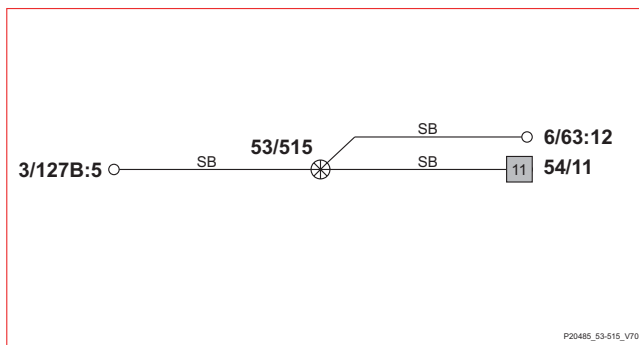
53/514 BLIS



# Junction points

## 53/515

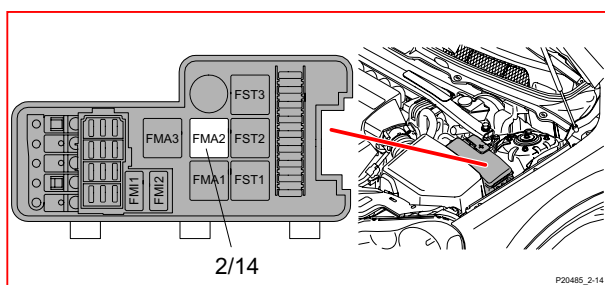
### 53/515 BLIS



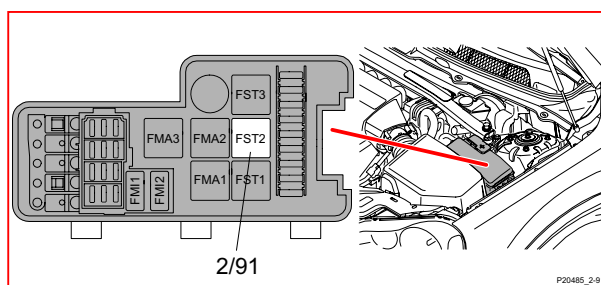
# Component illustrations

## 2/14 - 6/113

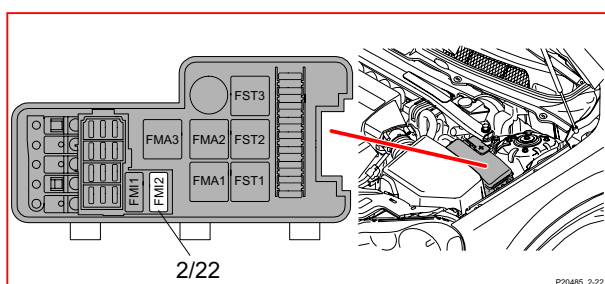
**2/14 Relay, glow plug unit, XC90**



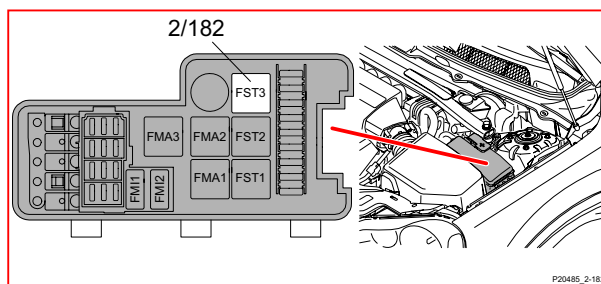
**2/91 Relay, intermittent wiping, XC90**



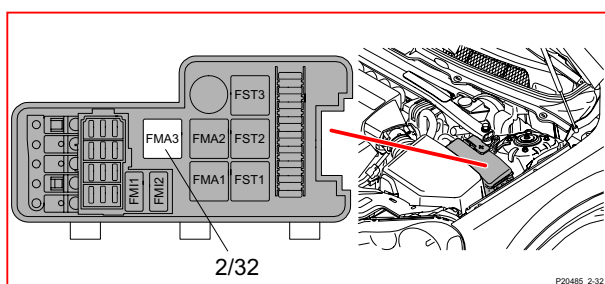
**2/22 Relay, climate control system XC90**



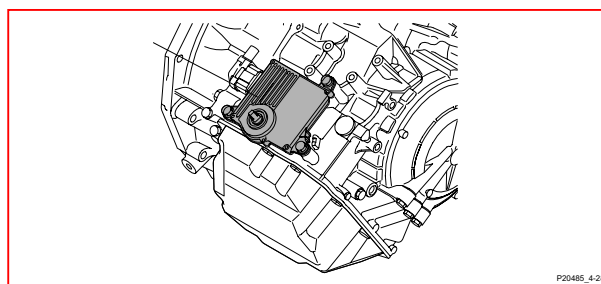
**2/182 Relay, high pressure headlight washer motor, XC90**



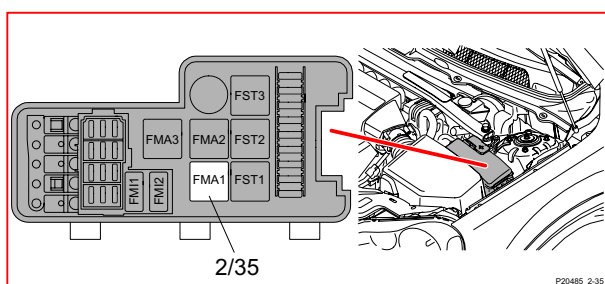
**2/32 Main relay, engine management system, XC90**



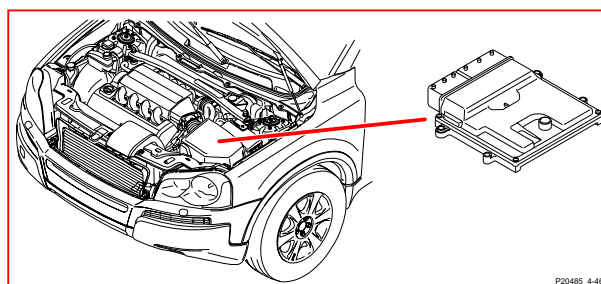
**4/28 Transmission Control Module (TCM), TF80-SC AWD**



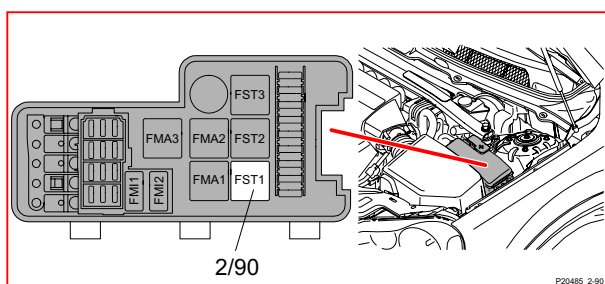
**2/35 Relay, starter motor, XC90**



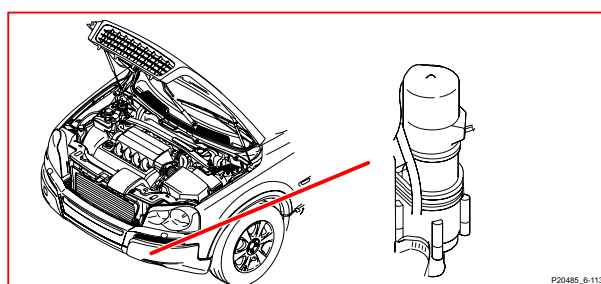
**4/46 Engine Control Module (ECM), 8-cyl.**



**2/90 Relay, windshield wiper, low/high speed, XC90**



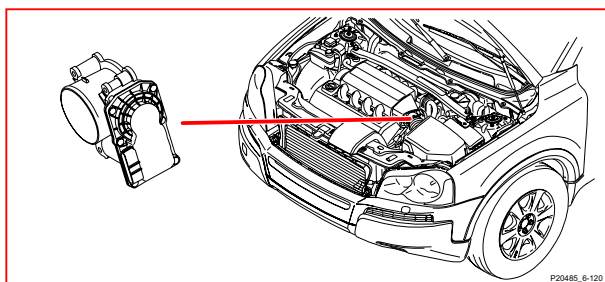
**6/113 Coolant pump, 8-cyl.**



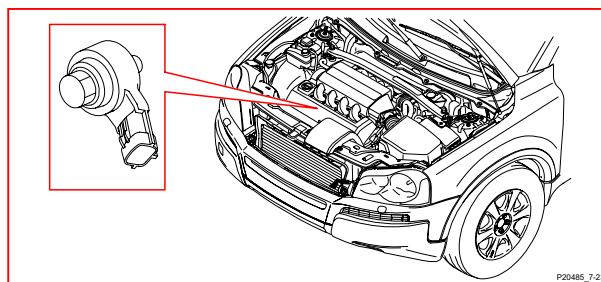
# Component illustrations

## 6/120 - 7/62

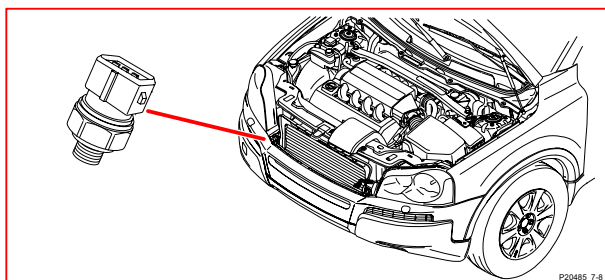
**6/120 Motor, throttle body, 8-cyl.**



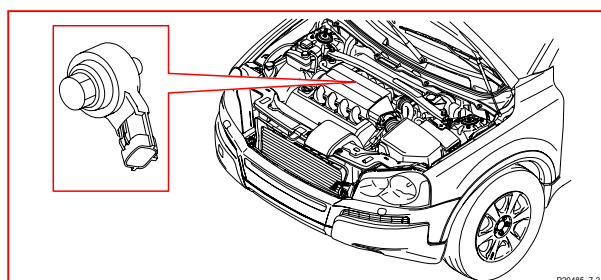
**7/23 Knock sensor, bank B, 8-cyl.**



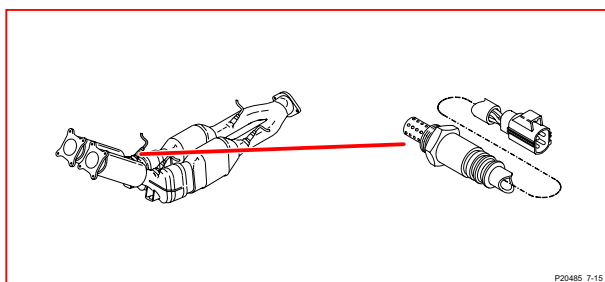
**7/8 Pressure sensor, climate control system, 8-cyl.**



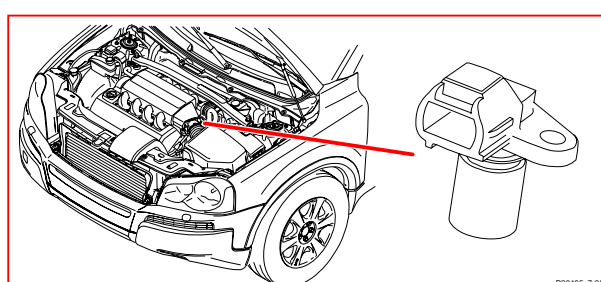
**7/24 Knock sensor, bank A, 8-cyl.**



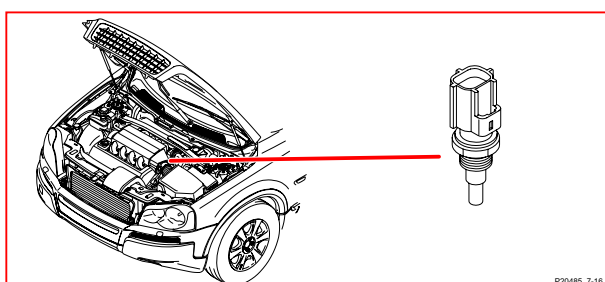
**7/15 Front heated oxygen sensor, bank A, 8-cyl.**



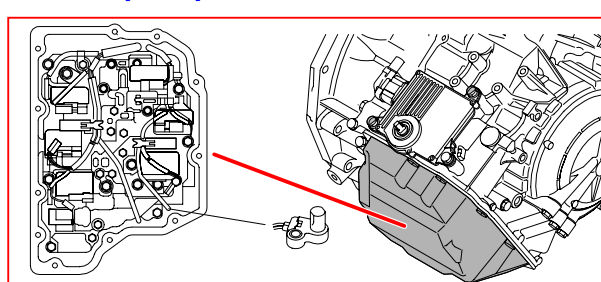
**7/25 Impulse sensor, 8-cyl.**



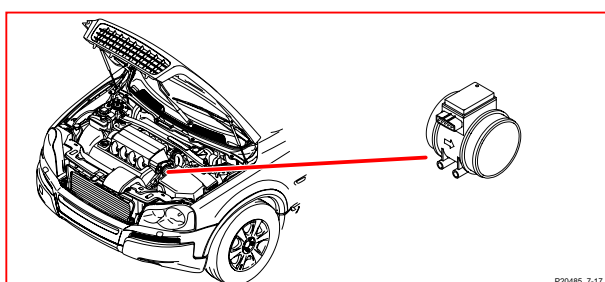
**7/16 Coolant temperature sensor, 8-cyl.**



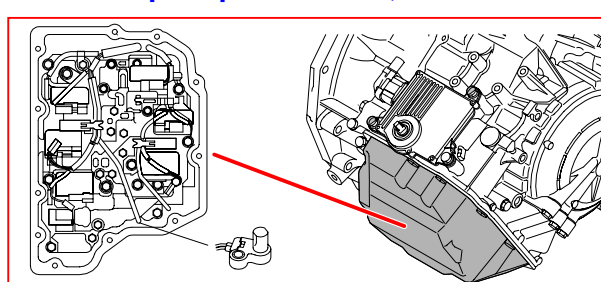
**7/61 Input speed sensor, TF-80SC AWD**



**7/17 Mass air flow sensor (MAF), 8-cyl.**



**7/62 Output speed sensor, TF-80SC AWD**

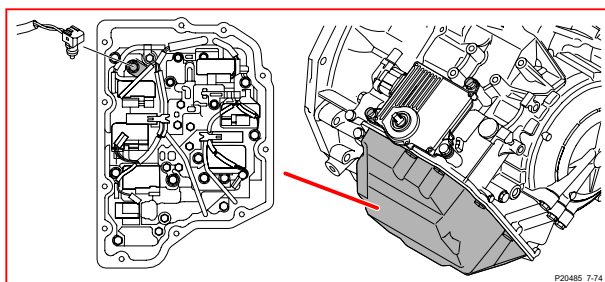




# Component illustrations

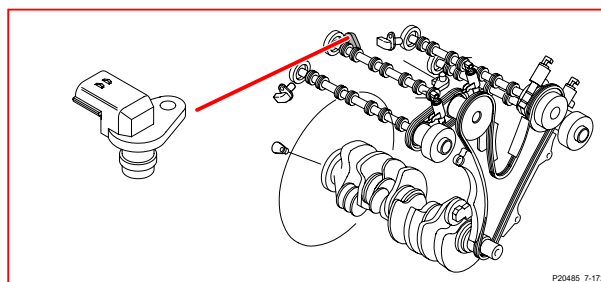
7/74 - 8/3

**7/74 Fluid temperature sensor, automatic transmission, TF-80SC AWD**



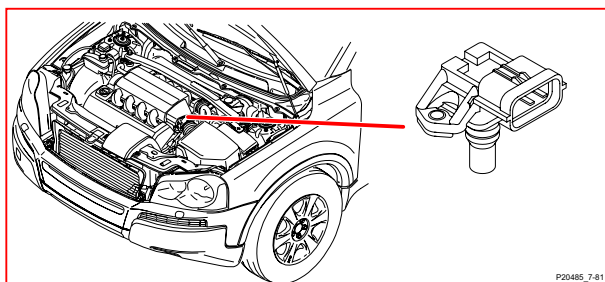
P20485\_7-74

**7/172 Intake camshaft position sensor, bank A, 8-cyl.**



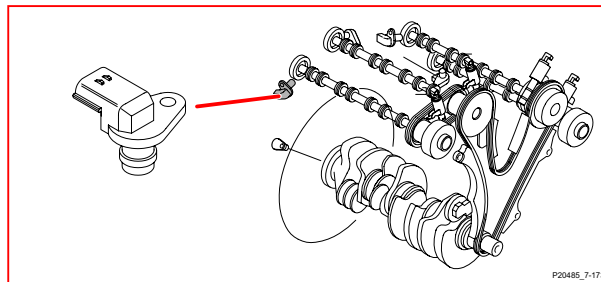
P20485\_7-172

**7/81 Pressure sensor, intake pipe, 8-cyl.**



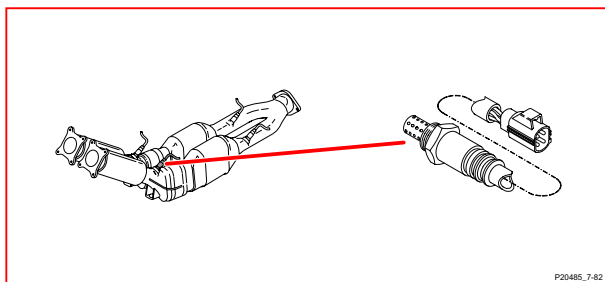
P20485\_7-81

**7/173 Exhaust camshaft position sensor, bank A, 8-cyl.**



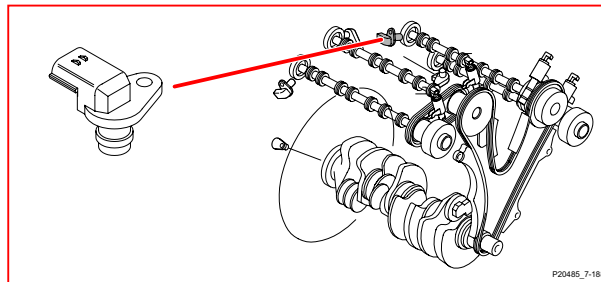
P20485\_7-173

**7/82 Front heated oxygen sensor, bank B, 8-cyl.**



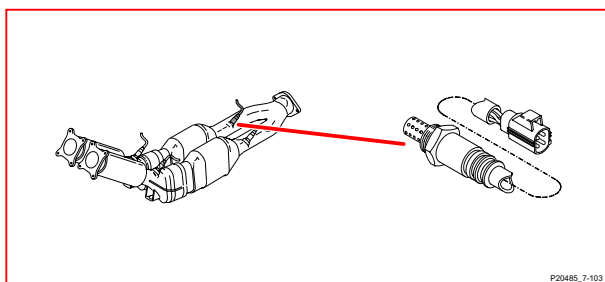
P20485\_7-82

**7/188 Intake camshaft position sensor, bank B, 8-cyl.**



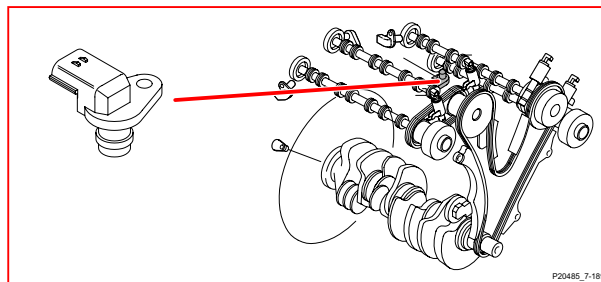
P20485\_7-188

**7/103 Rear heated oxygen sensor, bank A, 8-cyl.**



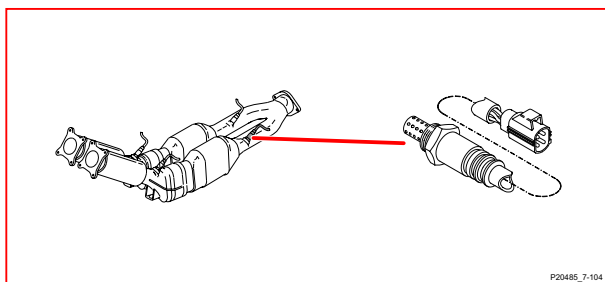
P20485\_7-103

**7/189 Exhaust camshaft position sensor, bank B, 8-cyl.**



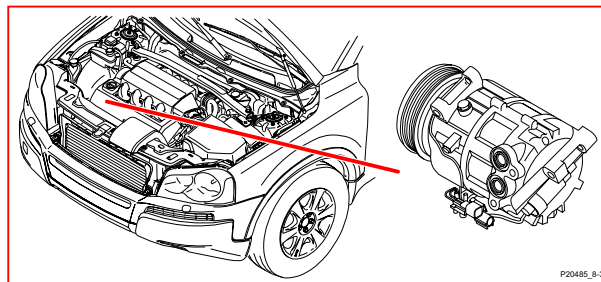
P20485\_7-189

**7/104 Rear heated oxygen sensor, bank B, 8-cyl.**



P20485\_7-104

**8/3 Electromagnetic clutch, climate control system, 8-cyl.**



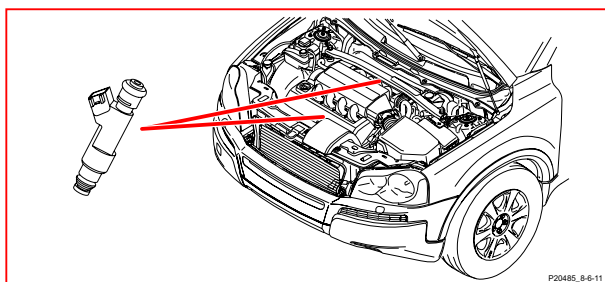
P20485\_8-3



# Component illustrations

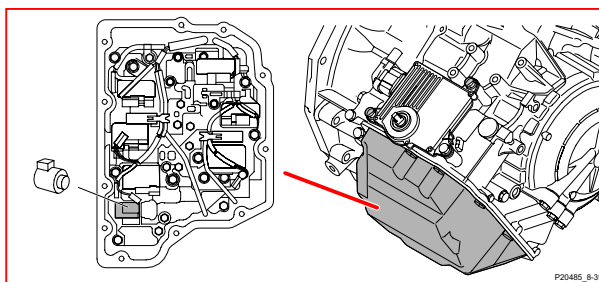
## 8/6 - 8/107

**8/6-11 Injectors, 8-cyl.**



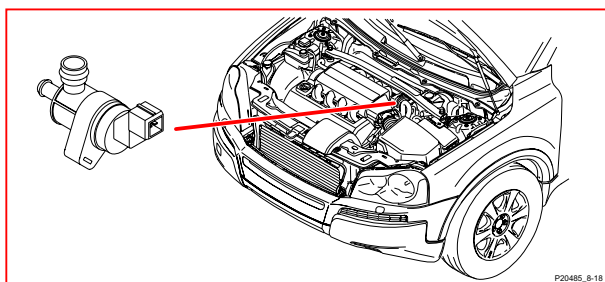
P20485\_8-6-11

**8/39 Shift solenoid 2 TF-80SC AWD**



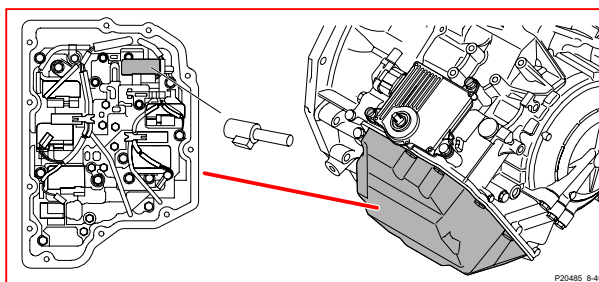
P20485\_8-39

**8/18 EVAP valve, 8-cyl.**



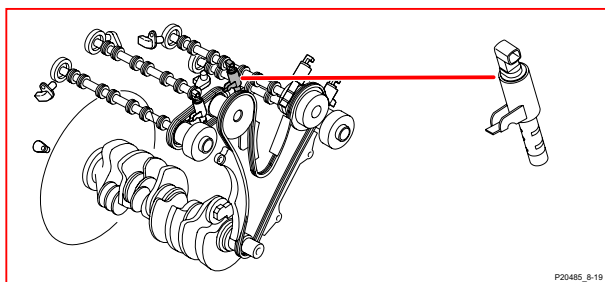
P20485\_8-18

**8/40 Lock-up solenoid TF-80SC AWD**



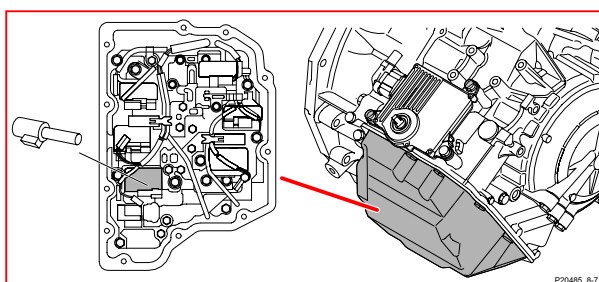
P20485\_8-40

**8/19 Solenoid, variable valve timing intake, bank A, 8-cyl.**



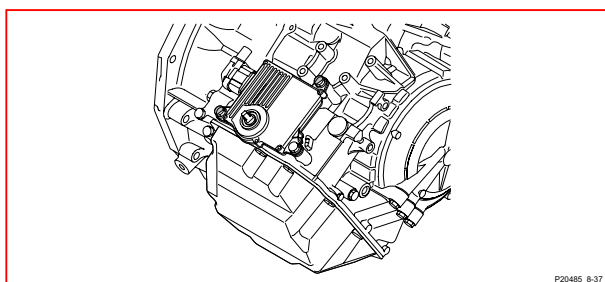
P20485\_8-19

**8/71 Throttle solenoid TF-80SC AWD**



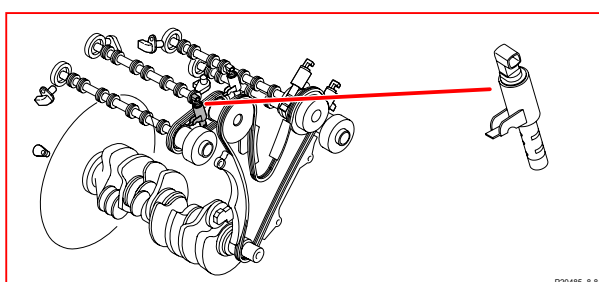
P20485\_8-71

**8/37 Automatic transmission TF-80SC AWD**



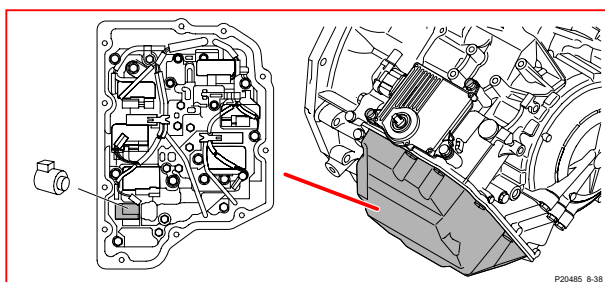
P20485\_8-37

**8/81 Solenoid, variable valve timing outlet, bank A, 8-cyl.**



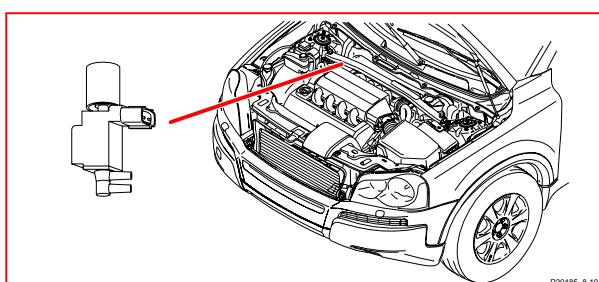
P20485\_8-81

**8/38 Shift solenoid 1 TF-80SC AWD**



P20485\_8-38

**8/107 Valve, variable intake, 8-cyl.**

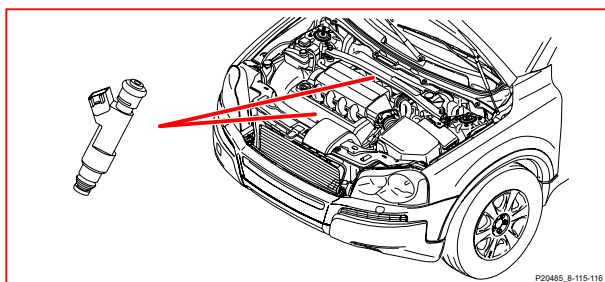


P20485\_8-107

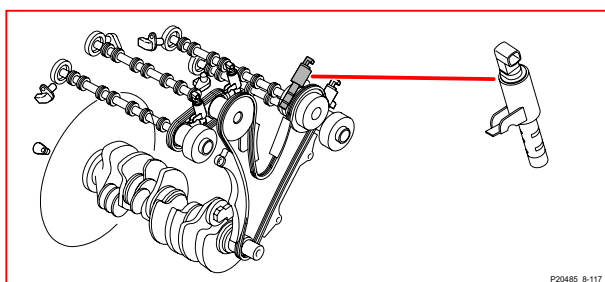
# Component illustrations

## 8/115 - 15/31

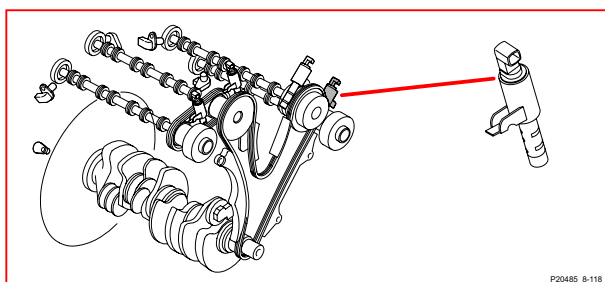
### 8/115-116 Injectors, 8-cyl.



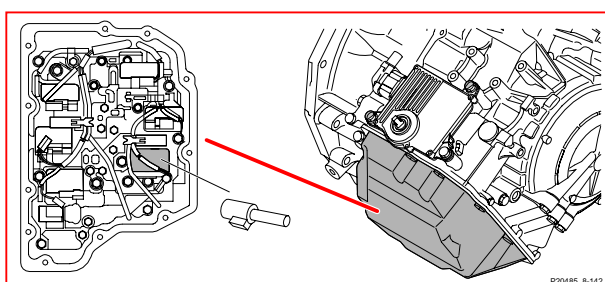
### 8/117 Solenoid, variable valve timing intake, bank B, 8-cyl.



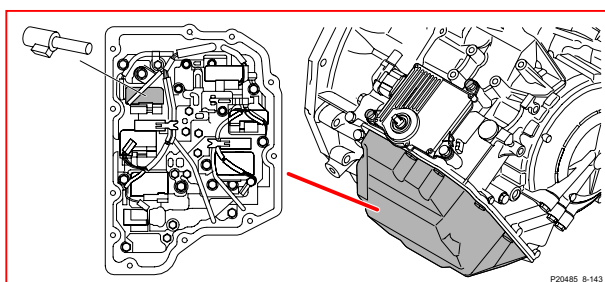
### 8/118 Solenoid, variable valve timing outlet, bank B, 8-cyl.



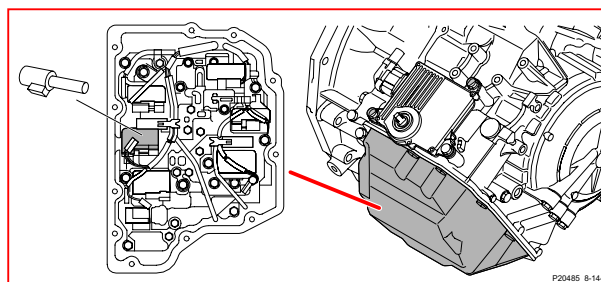
### 8/142 Linear pressure solenoid SLB1 TF-80SC AWD



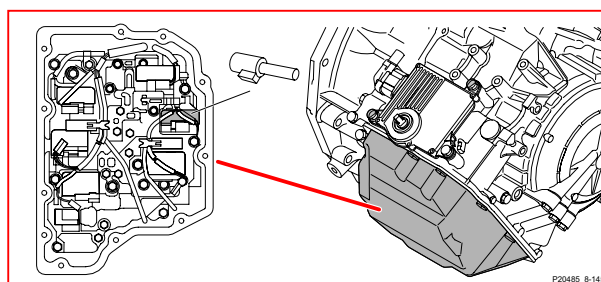
### 8/143 Linear pressure solenoid SLC1 TF-80SC AWD



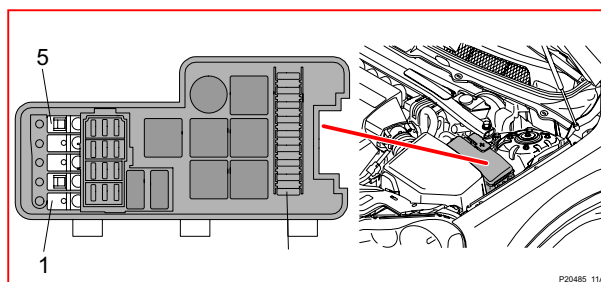
### 8/144 Linear pressure solenoid SLC2 TF-80SC AWD



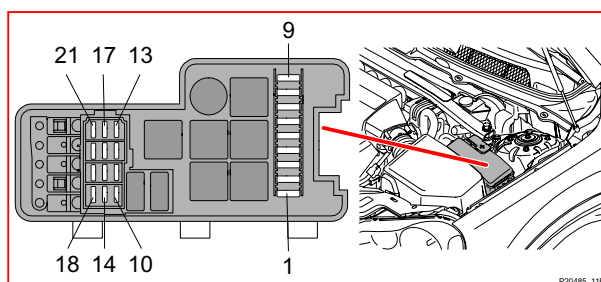
### 8/145 Linear pressure solenoid SLC3 TF-80SC AWD



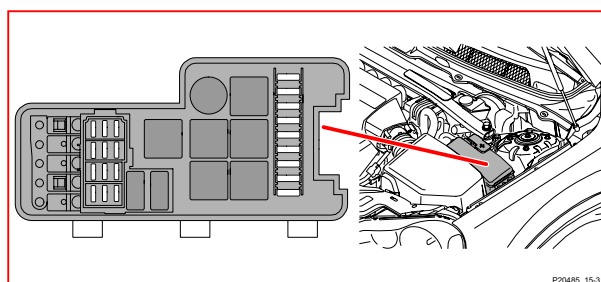
### 11A Main fuses in fuse box engine compartment XC90



### 11B Fuses in engine compartment fuse box XC90



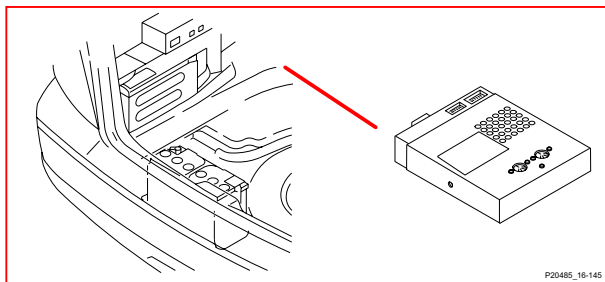
### 15/31 Engine compartment electrical distribution box XC90



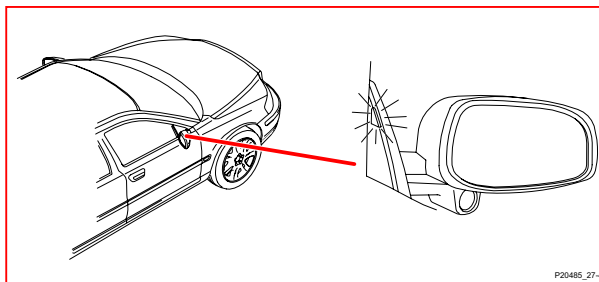
# Component illustrations

## 16/145 - 31/89

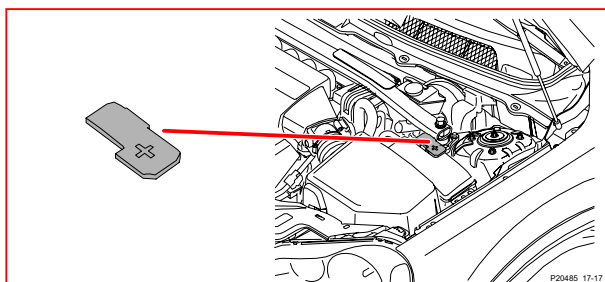
**16/145 Satellite radio receiver**



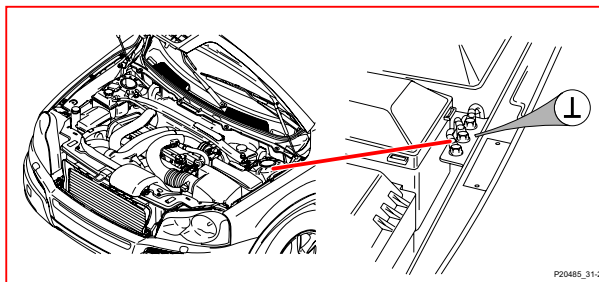
**27/4 Right-hand Camera Module (RCM)**



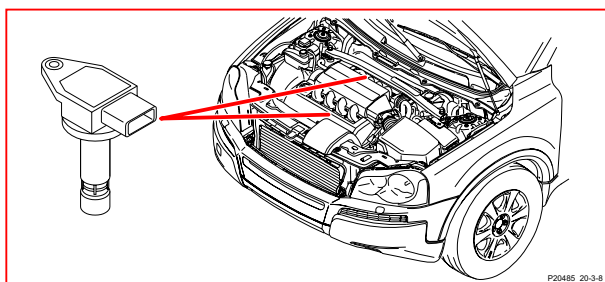
**17/17 Auxiliary start connection XC90**



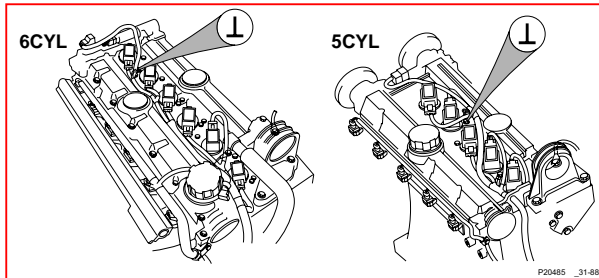
**31/2 Ground connection, left MacPherson strut tower**



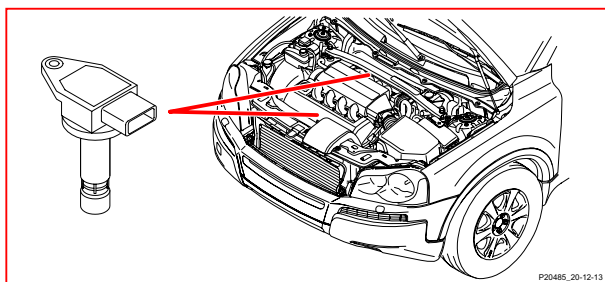
**20/3-8 Spark plug with ignition coil, 8-cyl.**



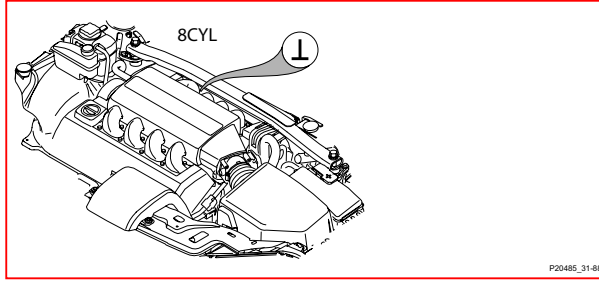
**31/88 Ground connection, Engine ignition coil group 1**



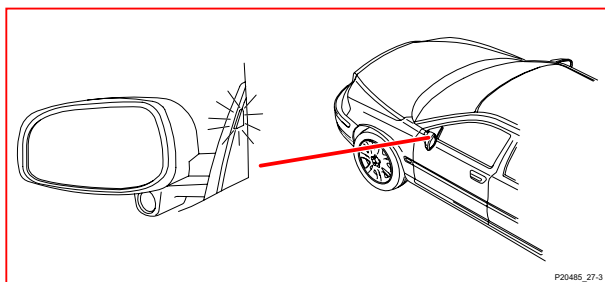
**20/12-13 Spark plug with ignition coil, 8-cyl.**



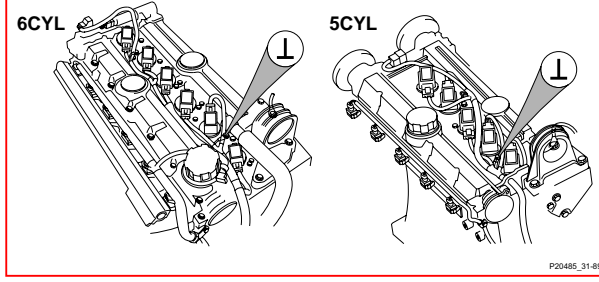
**31/88 Ground connection, engine ignition coils, 8-cyl.**



**27/3 Left-hand Camera Module (LCM)**



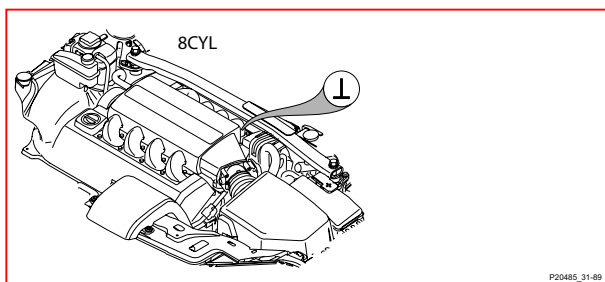
**31/89 Ground connection, Engine ignition coil group 2**



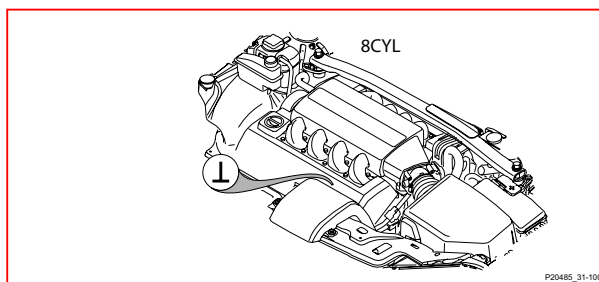
# Component illustrations

## 31/89 - 54/57.1

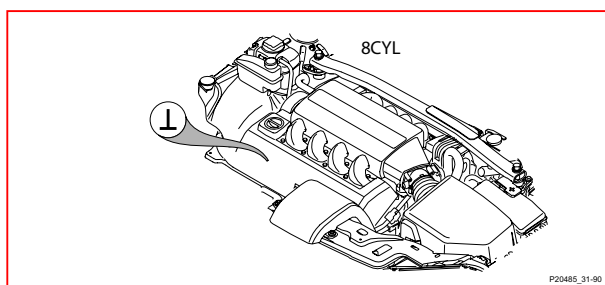
**31/89** Ground connection, engine ignition coils, 8-cyl.



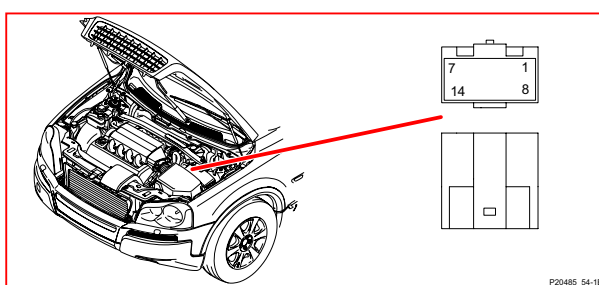
**31/100** Ground connection, engine ignition coils, 8-cyl.



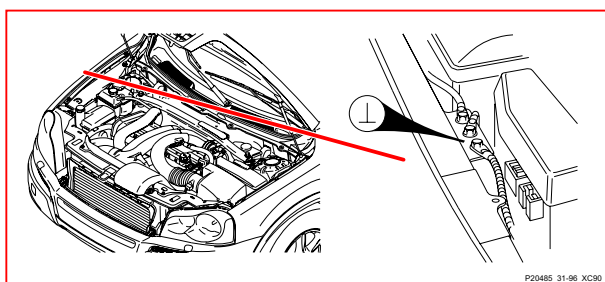
**31/90** Ground connection, engine ignition coils, 8-cyl.



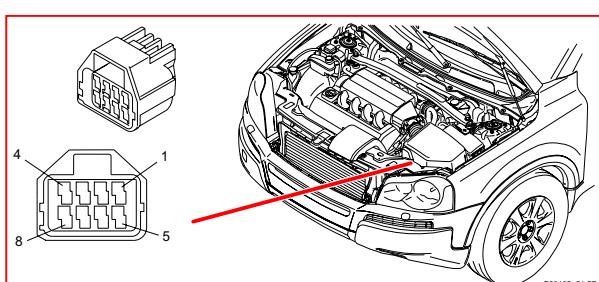
**54/1B** Connector



**31/96** Ground connection, right MacPherson strut tower



**54/57.1** Connector





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| 7/17 | Mass airflow sensor (MAF), XC90                                 | 7/123 | Clutch pedal sensor, XC90   |
| 7/17 | <a href="#">Mass air flow sensor (MAF), 8-cyl.</a>              | 7/124 | Brake pedal sensor, XC90  |
| 7/23 | Rear knock sensor, XC90   | 7/129 | Brake pressure sensor 2, XC90   |
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| 8/17   | EGR valve, Diesel, XC90                                | 8/142     | Linear pressure solenoid SLB1 TF-80SC AWD              |
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| 8/19   | Solenoid, variable valve timing intake, bank A, 8-cyl. |           |  |
| 8/28   | Turbo control valve, XC90                              |           |  |
| 8/36   | Shift lock solenoid, XC90                              | 9/12      | Seat Heater Module (SHM), left-hand                    |
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| 8/38   | Shift solenoid 1 TF-80SC AWD                           |           |  |
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| 8/82   | Variable turbo geometry solenoid, Diesel XC90          |           |  |
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|        |  | 11C       | Fuses in passenger compartment fuse box                |
|        |  | 11E       | Main fuses at battery                                  |



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| 16/5     | Speaker, right rear door, V70                       | 31/67   | Ground connection, front seat riser right side                     |
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| 16/35    | Siren Control Module (SCM)                          | 31/73   | Ground connection, rear seat riser right side, XC90                |
| 16/45    | Road Traffic Information (RTI)                      | 31/83   | Ground connection, A-pillar left side, XC90                        |
| 16/46    | RTI display   | 31/84   | Ground connection, A-pillar right side                             |
| 16/46    | Multimedia display, XC90                            | 31/88   | Ground connection, Engine ignition coil group 1                    |
| 16/57    | Speaker, left D-pillar, V70                         | 31/88   | Ground connection, engine ignition coils, 8-cyl.                   |
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| 16/60    | Phone Module (PHM), XC90                            | 31/89   | Ground connection, engine ignition coils, 8-cyl.                   |
| 16/62    | Hand unit, cellular telephone, XC90                 | 31/90   | Ground connection, engine ignition coils, 8-cyl.                   |
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| 16/79    | Subwoofer Module (SUB), XC90                        | 31/94   | Ground connection, right MacPherson strut tower, XC90              |
| 16/94    | Infotainment Control Module (ICM), XC90             | 31/95   | Ground connection, left MacPherson strut tower, XC90               |
| 16/105   | Audio control module (AUD), XC90                    | 31/96   | Ground connection, right MacPherson strut tower                    |
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| 16/149   | MP3 player  | 54/57.1 | Connector  |
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| 18/4     | Contact reel, XC90                                  | 16X/57  | Connector, original car interface, V70                             |
| 20/3-8   | Spark plug with ignition coil, XC90                 | 16X/58  | Connector, original car interface, V70                             |
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| 31/6     | Ground connection, A-pillar left side, XC90         |         |  |
| 31/10    | Ground connection, A-pillar right side, XC90        |         |  |

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