

Climatronic,

from June 2003

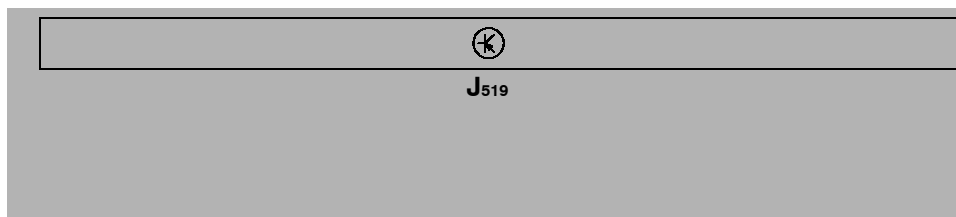
Notes:

Information for

- ◆ *Relay and fuse arrangements*
- ◆ *Connector arrangements*
- ◆ *Control Modules and Relays*
- ◆ *Ground connections*
- ⇒ *Component Locations!*

Information for

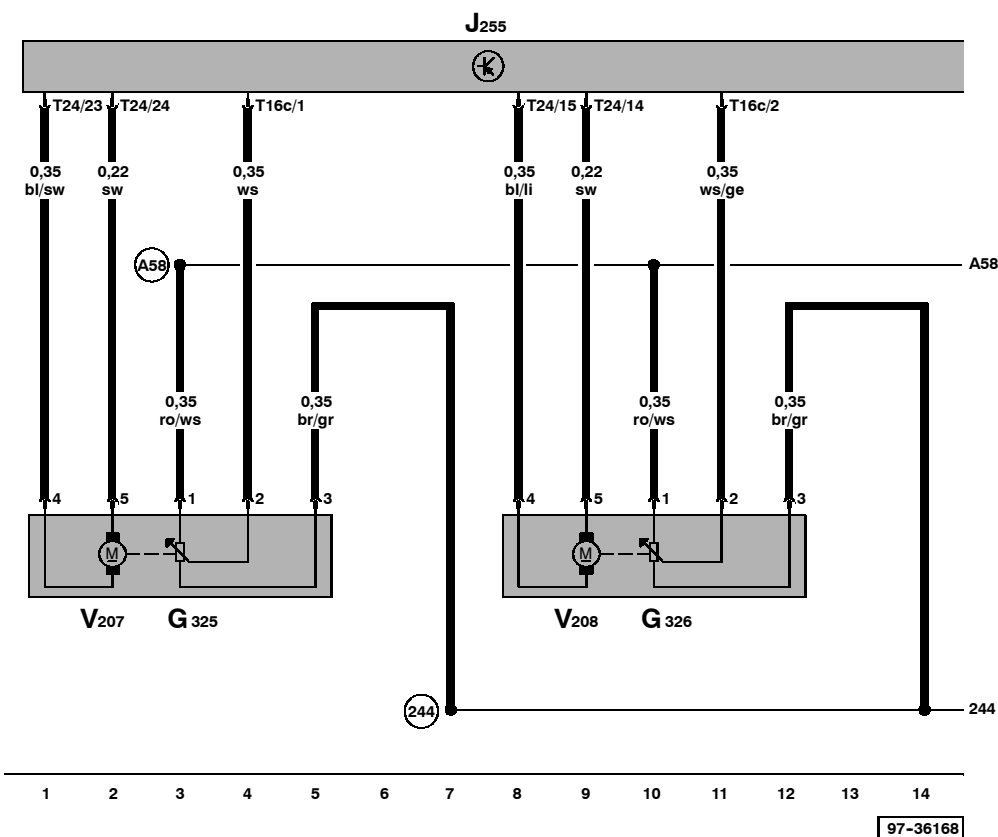
- ◆ *Troubleshooting Procedures*
- ⇒ *Guided Fault Finding using VAS 5051/5052*



Climatronic Control Module, Left and Center Air Outlet Blind Motor Position Sensor, Left and Center Air Outlet Blind Motor

- G325 - Left Air Outlet Blind Motor Position Sensor
- G326 - Center Air Outlet Blind Motor Position Sensor
- J255 - Climatronic Control Module
- J519 - Vehicle Electrical System Control Module
- T16c - 16-Pin connector
- T24 - 24-Pin connector
- V207 - Left Air Outlet Blind Motor
- V208 - Center Air Outlet Blind Motor

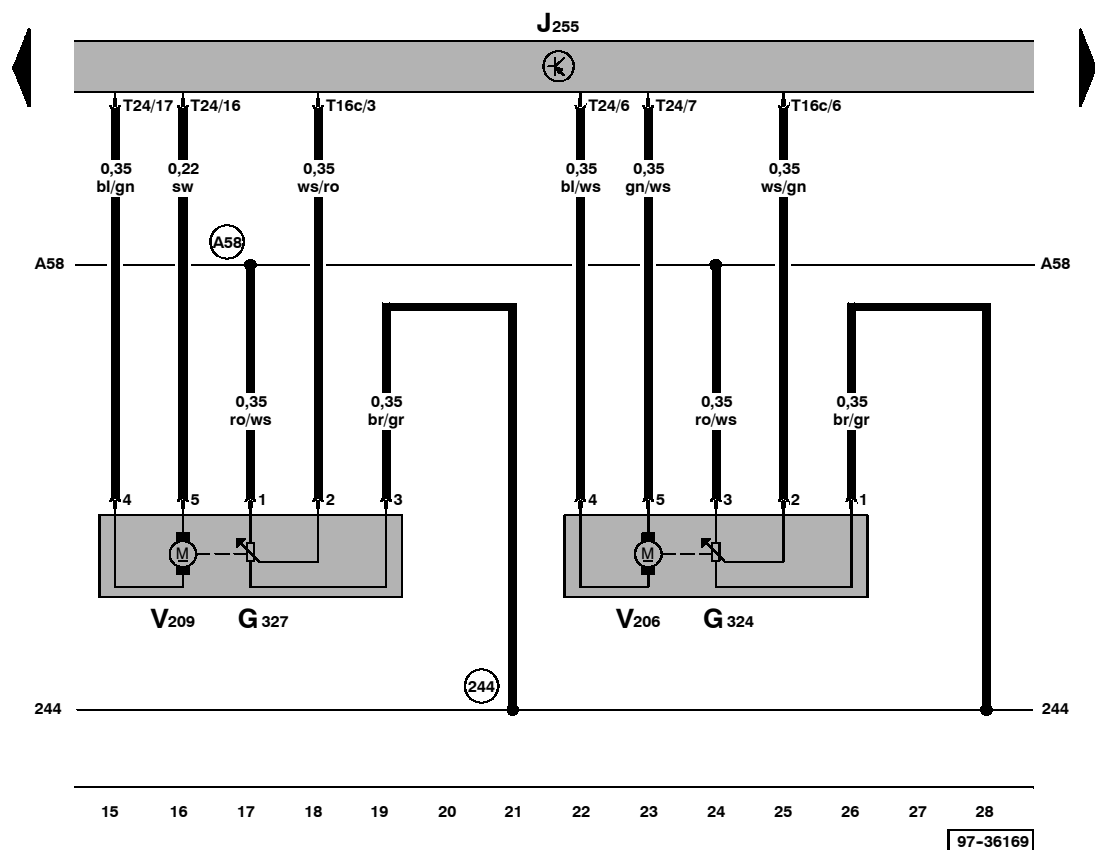
- (244) - Ground connection (Sensor ground), in wiring harness Climatronic
- (A58) - Wire connection (5 V), in instrument cluster wiring harness



Climatronic Control Module, Left Defrost/Upper Body Flap Motor Position Sensor, Left Defrost/Upper Body Flap Motor, Right Air Outlet Blind Motor

- G324 - Left Defrost/Upper Body Flap Motor Position Sensor
 G327 - Right Air Outlet Blind Motor Position Sensor
 J255 - Climatronic Control Module
 J519 - Vehicle Electrical System Control Module
 T16c - 16-Pin connector
 T24 - 24-Pin connector
 V206 - Left Defrost/Upper Body Flap Motor
 V209 - Right Air Outlet Blind Motor

- (244) - Ground connection (Sensor ground), in wiring harness Climatronic
 (A58) - Wire connection (5 V), in instrument cluster wiring harness



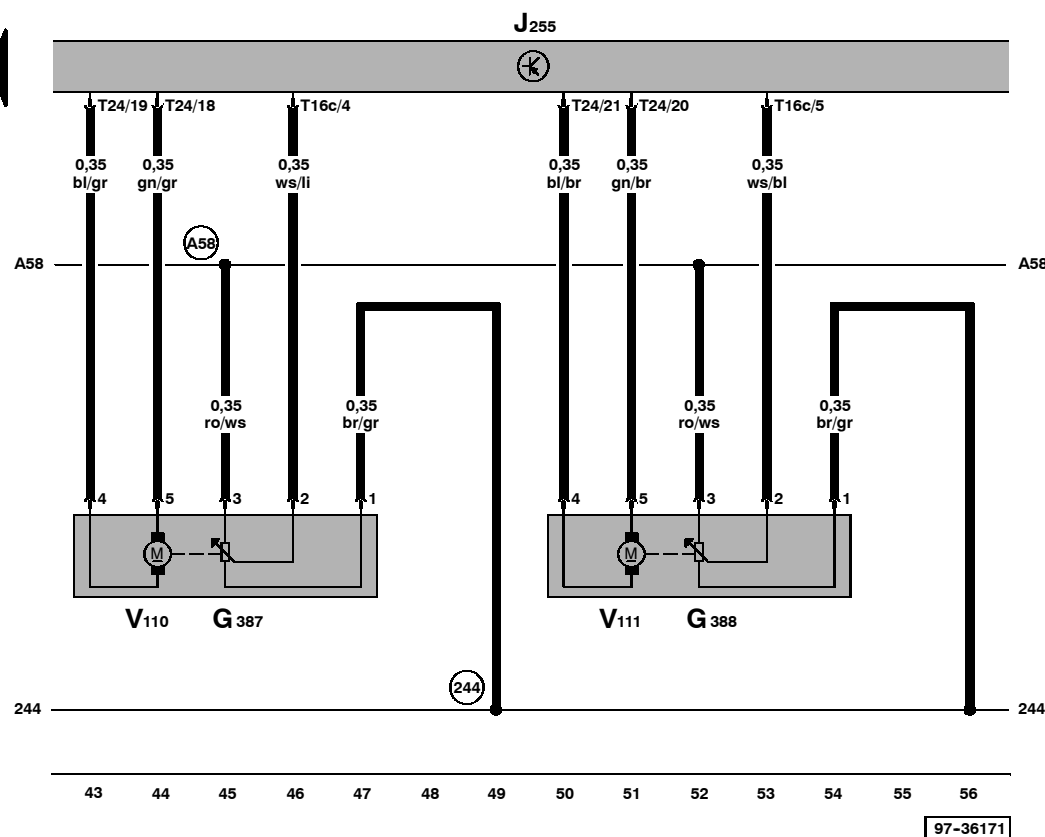


- 244 - Ground connection (Sensor ground), in wiring harness Climatronic
- A58 - Wire connection (5 V), in instrument cluster wiring harness

Climatronic Control Module, Left Front and Right Front Upper Body Outlet Position Sensor, Left and Right Center Vent Motor

- G387 - Left Front Upper Body Outlet Position Sensor
 G388 - Right Front Upper Body Outlet Position Sensor
 J255 - Climatronic Control Module
 J519 - Vehicle Electrical System Control Module
 T16c - 16-Pin connector
 T24 - 24-Pin connector
 V110 - Left Center Vent Motor
 V111 - Right Center Vent Motor

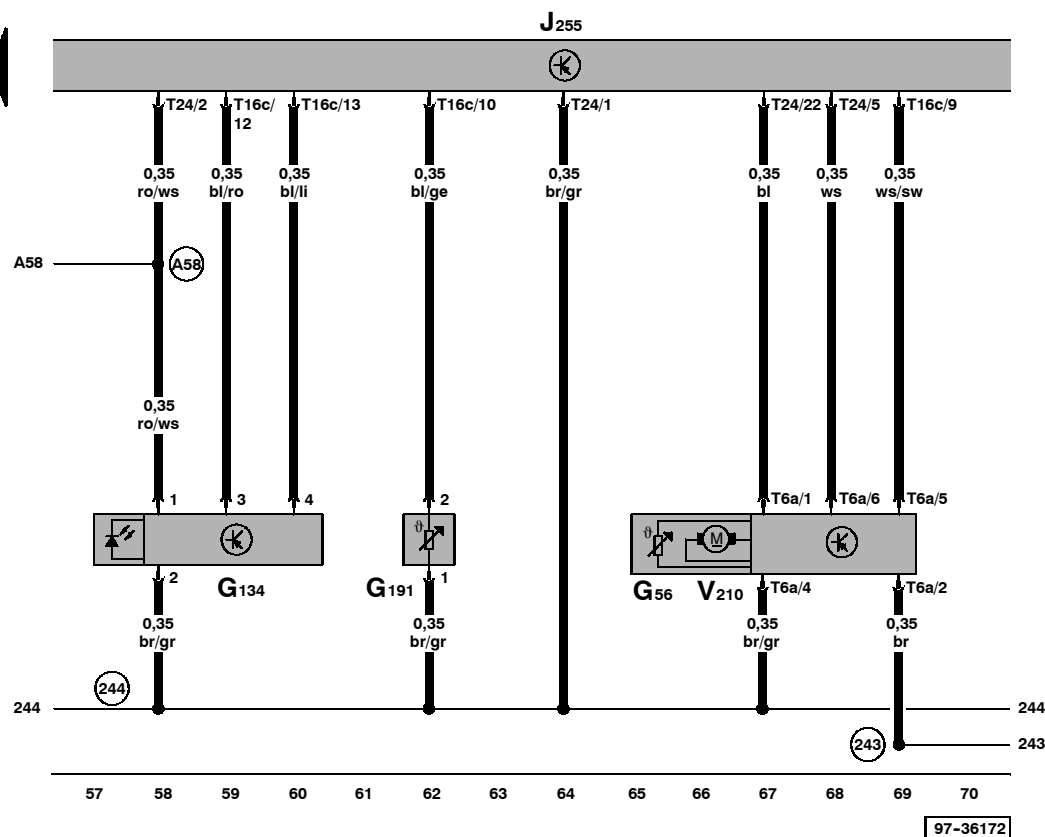
- (244) - Ground connection (Sensor ground), in wiring harness Climatronic
 (A58) - Wire connection (5 V), in instrument cluster wiring harness



Climatronic Control Module, Instrument Panel Interior Temperature Sensor, Sunlight Photosensor 2, Sender for outlet temperature

- G56 - Instrument Panel Interior Temperature Sensor
 G134 - Sunlight Photosensor 2
 G191 - Sender for outlet temperature, center
 J255 - Climatronic Control Module
 J519 - Vehicle Electrical System Control Module
 T6a - 6-Pin connector
 T16c - 16-Pin connector
 T24 - 24-Pin connector
 V210 - Interior Temperature Sensor Blower

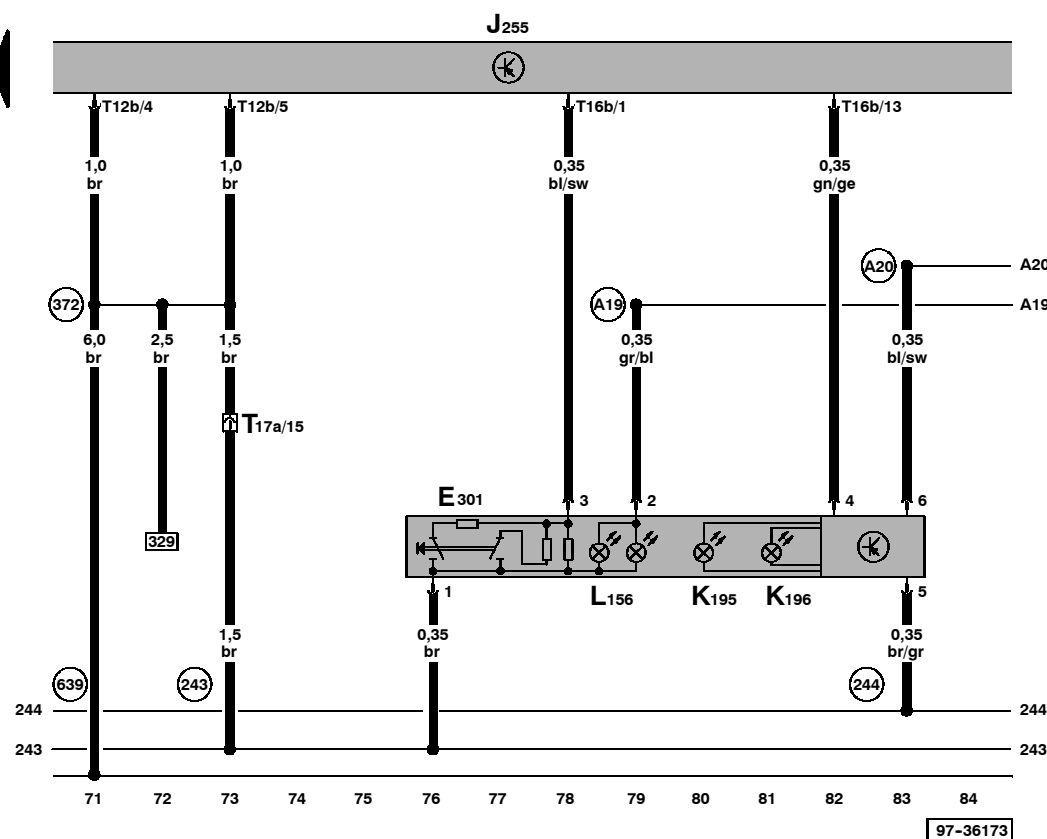
- (243) - Ground connection -1- in wiring harness, Climatronic
 (244) - Ground connection (Sensor ground), in wiring harness Climatronic
 (A58) - Wire connection (5 V), in instrument cluster wiring harness



Climatronic Control Module, Left Front Air Outlet Button, Vent Open and Closed Indicator Lamp, Switch Illumination Lamp

- E301 - Left Front Air Outlet Button
- J255 - Climatronic Control Module
- J519 - Vehicle Electrical System Control Module
- K195 - Vent Open Indicator Lamp
- K196 - Vent Closed Indicator Lamp
- L156 - Switch Illumination Lamp
- T12b - 12-Pin connector, black
- T16b - 16-Pin connector
- T17a - 17-Pin connector, grey, behind instrument panel, left

- (243) - Ground connection -1- in wiring harness, Climatronic
- (244) - Ground connection (Sensor ground), in wiring harness Climatronic
- (372) - Ground Connection 7 (in main wiring harness)
- (639) - Ground Connection (on left A-pillar)
- (A19) - wire connection (58d), in instrument panel wiring harness
- (A20) - Plus Connection (15a) (in instrument panel wiring harness)

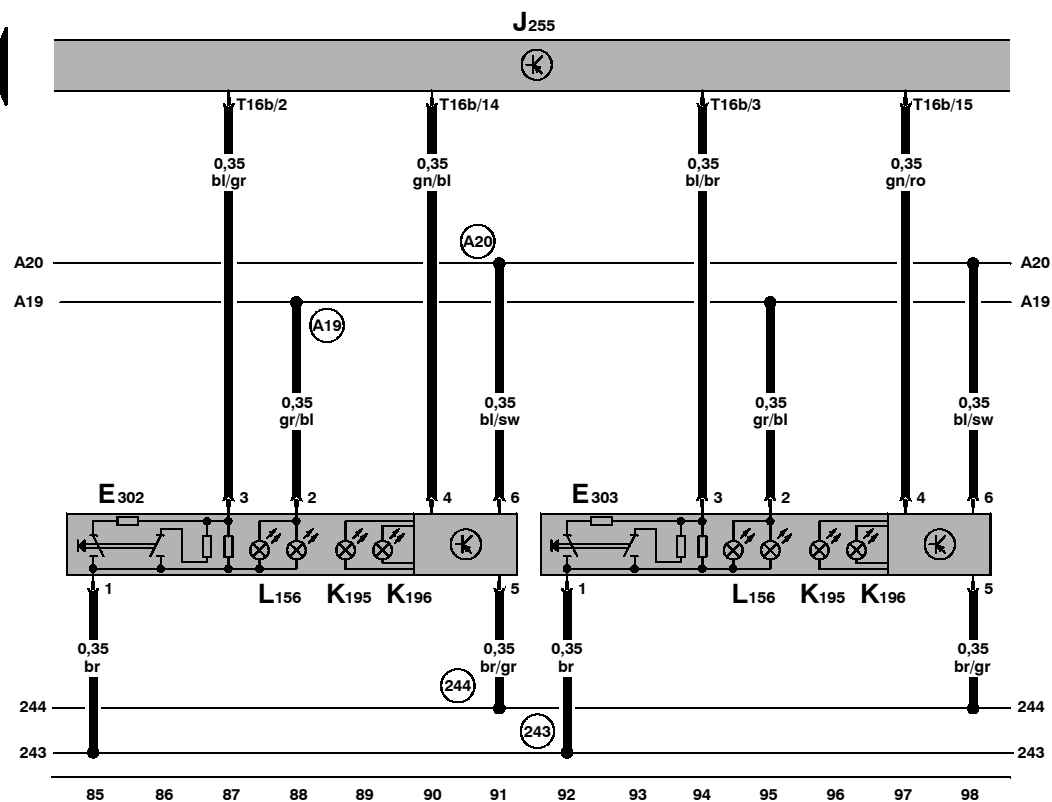


ws = white
 sw = black
 ro = red
 br = brown
 gn = green
 bl = blue
 gr = grey
 li = lilac
 ge = yellow
 or = orange

Climatronic Control Module, Left Front and Right Front (Center) Air Outlet Button, Vent Open and Closed Indicator Lamp, Switch Illumination Lamp

- E302 - Left Front (Center) Air Outlet Button
 E303 - Right Front (Center) Air Outlet Button
 J255 - Climatronic Control Module
 J519 - Vehicle Electrical System Control Module
 K195 - Vent Open Indicator Lamp
 K196 - Vent Closed Indicator Lamp
 L156 - Switch Illumination Lamp
 T16b - 16-Pin connector

- (243) - Ground connection -1- in wiring harness, Climatronic
 (244) - Ground connection (Sensor ground), in wiring harness Climatronic
 (A19) - wire connection (58d), in instrument panel wiring harness
 (A20) - Plus Connection (15a) (in instrument panel wiring harness)



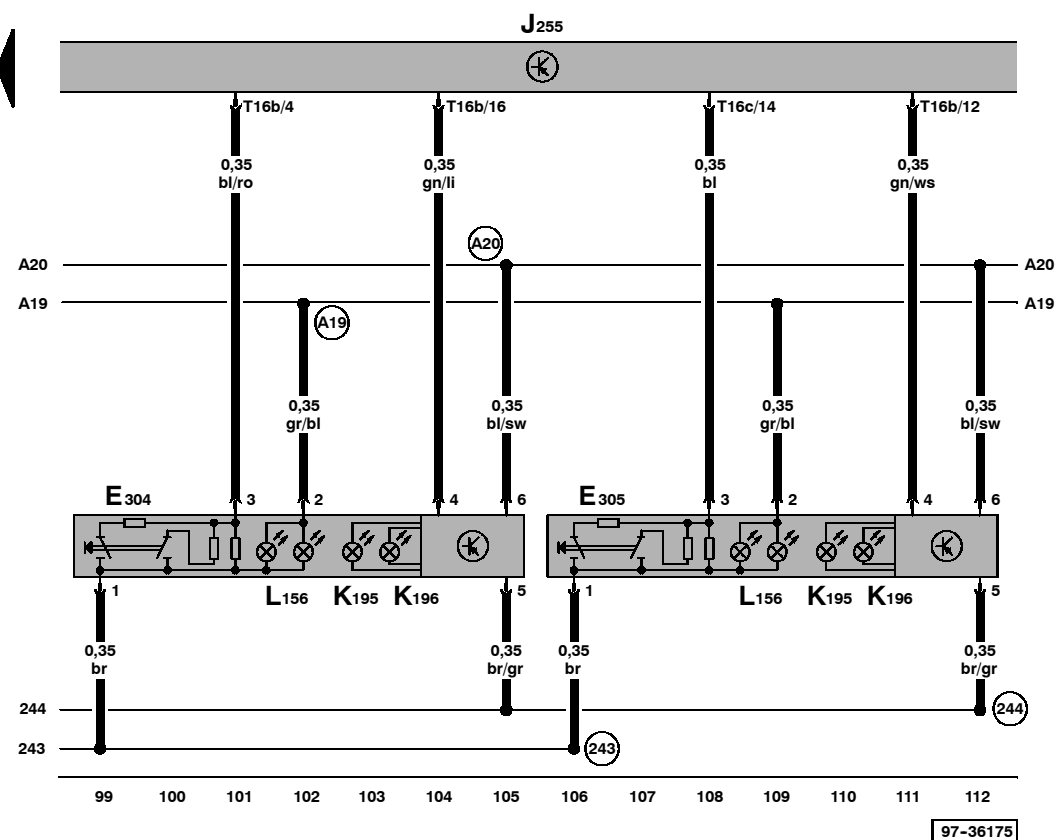
ws = white
 sw = black
 ro = red
 br = brown
 gn = green
 bl = blue
 gr = grey
 li = lilac
 ge = yellow
 or = orange

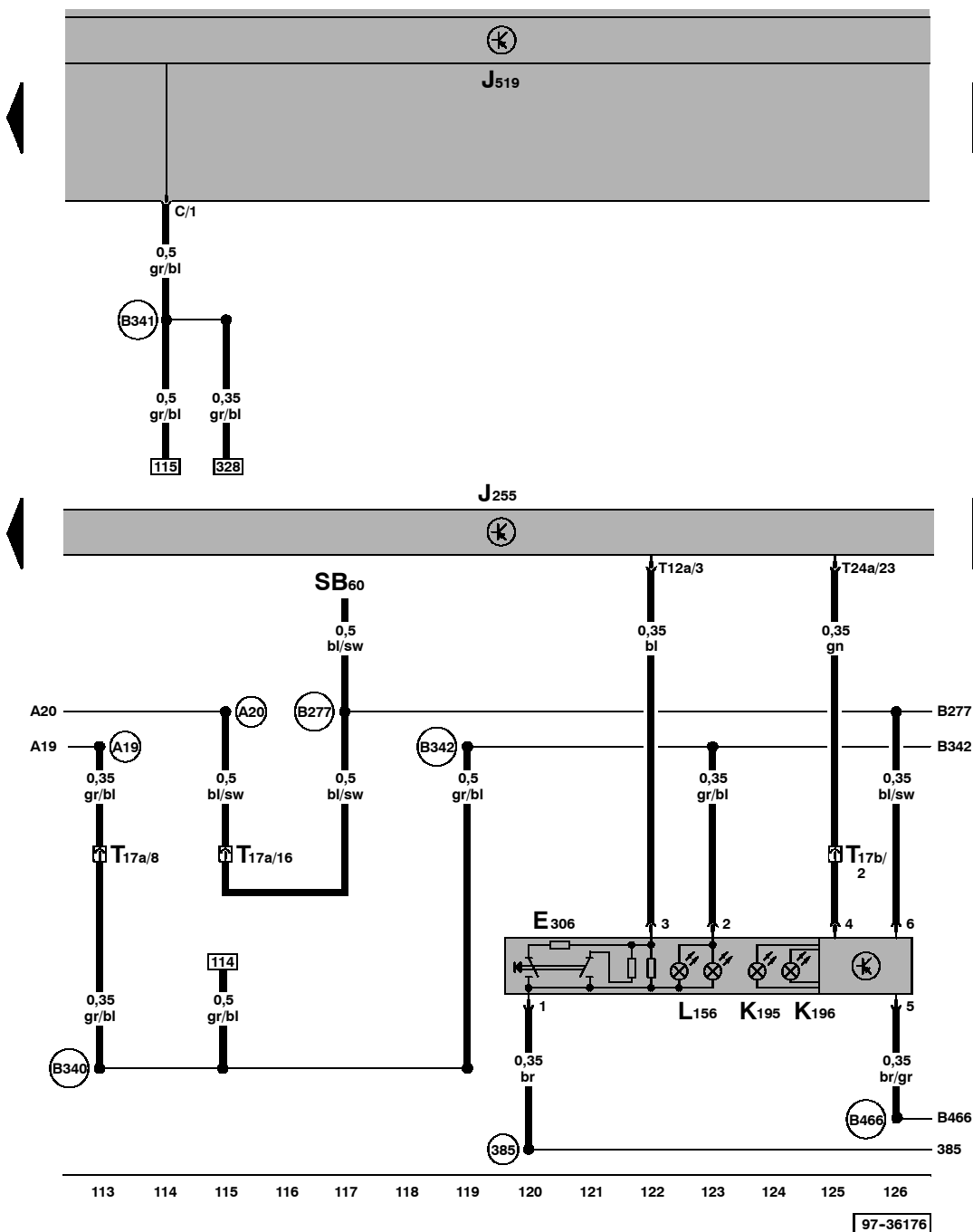
97-36174

Climatronic Control Module, Right Front Air Outlet Button, Footwell/Cabin Temperature Differential button, Vent Open and Closed Indicator Lamp, Switch Illumination Lamp

- E304 - Right Front Air Outlet Button
- E305 - Footwell/Cabin Temperature Differential Button
- J255 - Climatronic Control Module
- J519 - Vehicle Electrical System Control Module
- K195 - Vent Open Indicator Lamp
- K196 - Vent Closed Indicator Lamp
- L156 - Switch Illumination Lamp
- T16b - 16-Pin connector
- T16c - 16-Pin connector

- (243) - Ground connection -1- in wiring harness, Climatronic
- (244) - Ground connection (Sensor ground), in wiring harness Climatronic
- (A19) - wire connection (58d), in instrument panel wiring harness
- (A20) - Plus Connection (15a) (in instrument panel wiring harness)





Climatronic Control Module, Left Rear Center Air Outlet Button, Vent Open and Vent Closed Indicator Lamp

- E306 - Left Rear Center Console Air Outlet Button
- J255 - Climatronic Control Module
- J519 - Vehicle Electrical System Control Module
- K195 - Vent Open Indicator Lamp
- K196 - Vent Closed Indicator Lamp
- L156 - Switch Illumination Lamp
- SB60 - Fuse 60 (in fuse holder)
- T12a - 12-Pin connector
- T17a - 17-Pin connector, grey, behind instrument panel, left
- T17b - 17-Pin connector, black, behind instrument panel, left
- T24a - 24-Pin connector, red

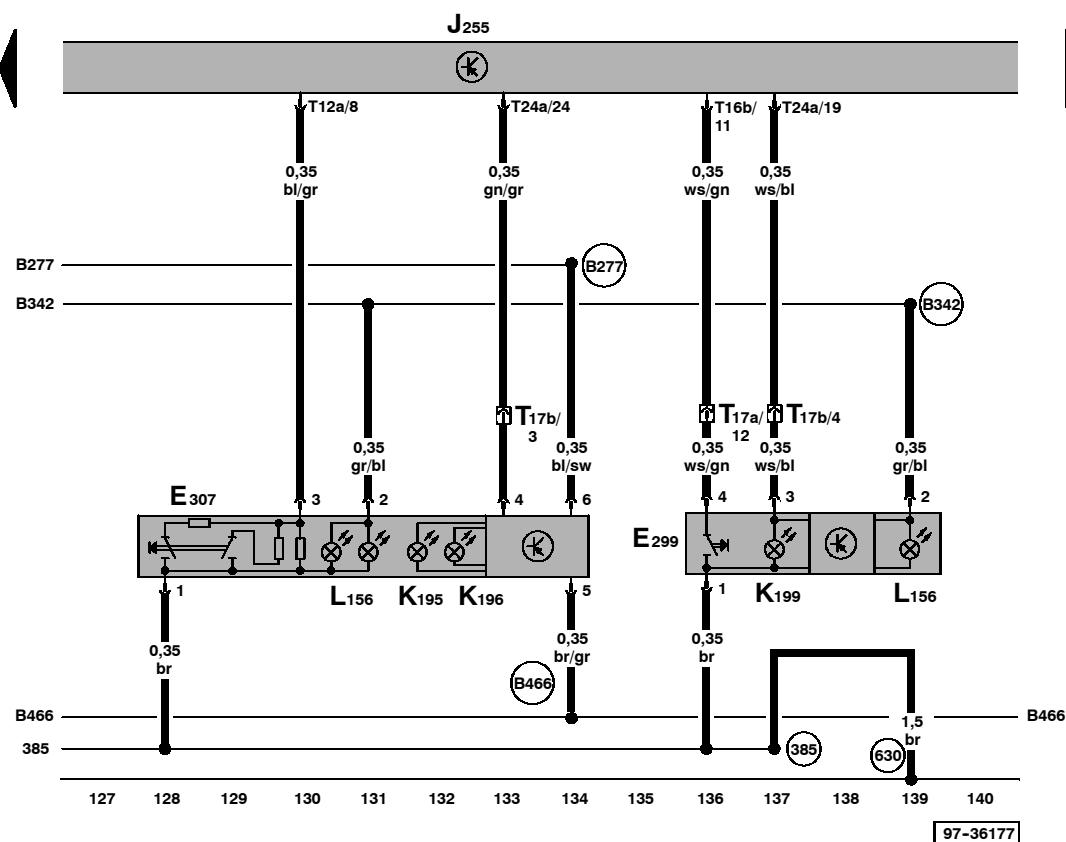
- ③85 - Ground Connection 20 (in main wiring harness)
- ②A19 - wire connection (58d), in instrument panel wiring harness
- ②A20 - Plus Connection (15a) (in instrument panel wiring harness)
- ②B277 - Plus Connection 1 (15a) (in main wiring harness)
- ②B340 - Connection 1 (58d) (in main wiring harness)
- ②B341 - Connection 2 (58d) (in main wiring harness)
- ②B342 - Connection 3 (58d) (in main wiring harness)
- ②B466 - Connection 2 (in main wiring harness)

ws = white
sw = black
ro = red
br = brown
gn = green
bl = blue
gr = grey
li = lilac
ge = yellow
or = orange

Climatronic Control Module, Left Rear Defrost Button, Right Rear Center Console Air Outlet Button, Vent Open and Vent Closed Indicator Lamp

- E299 - Left Rear Defrost Button
 E307 - Right Rear Center Console Air Outlet Button
 J255 - Climatronic Control Module
 J519 - Vehicle Electrical System Control Module
 K195 - Vent Open Indicator Lamp
 K196 - Vent Closed Indicator Lamp
 K199 - Left Rear Defrost Indicator Lamp
 L156 - Switch Illumination Lamp
 T12a - 12-Pin connector
 T16b - 16-Pin connector
 T17a - 17-Pin connector, grey, behind instrument panel, left
 T17b - 17-Pin connector, black, behind instrument panel, left
 T24a - 24-Pin connector, red

- (385) - Ground Connection 20 (in main wiring harness)
 (630) - Ground Connection (Radio, A/C)
 (B277) - Plus Connection 1 (15a) (in main wiring harness)
 (B342) - Connection 3 (58d) (in main wiring harness)
 (B466) - Connection 2 (in main wiring harness)

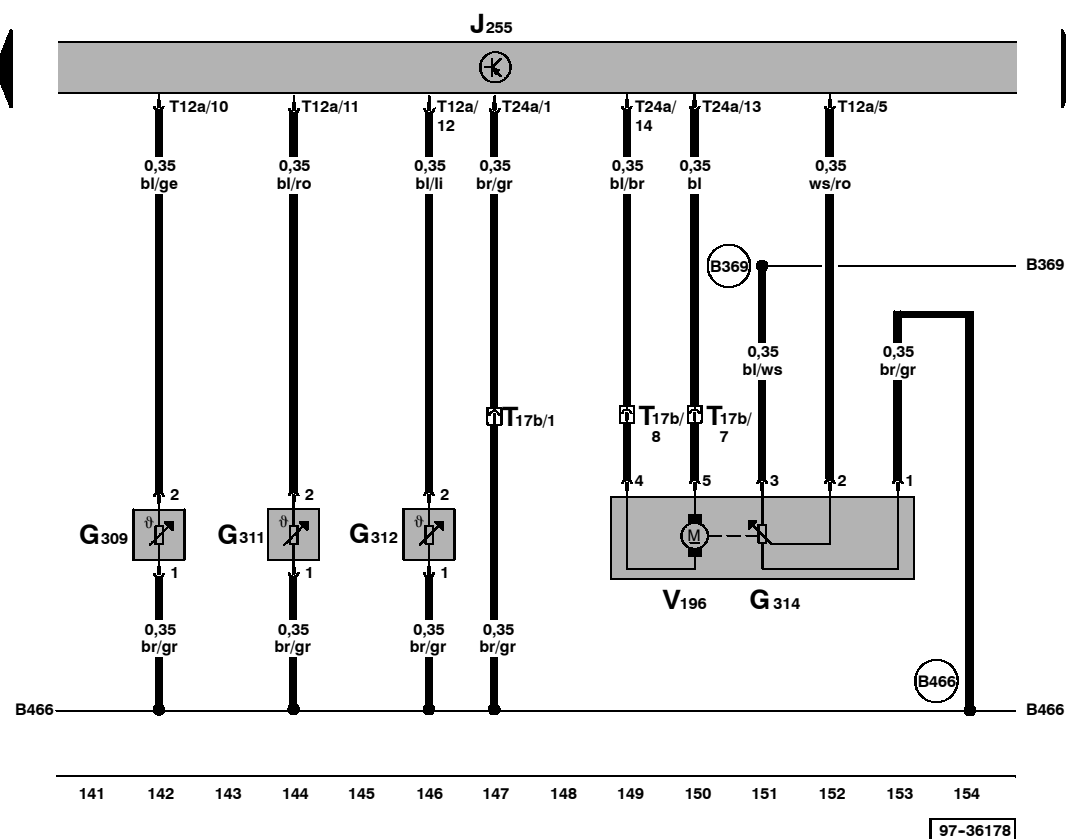


**Climatronic Control Module, Left Rear Footwell/
Defrost Flap Motor Position Sensor, Left Rear Foot-
well Temperature Sensor**

- G309 - Left Rear Footwell Temperature Sensor
 G311 - Left Rear Center Console Temperature Sensor
 G312 - Right Rear Center Console Temperature Sensor
 G314 - Left Rear Footwell/Defrost Flap Motor Position Sensor
 J255 - Climatronic Control Module
 J519 - Vehicle Electrical System Control Module
 T12a - 12-Pin connector
 T17b - 17-Pin connector, black, behind instrument panel, left
 T24a - 24-Pin connector, red
 V196 - Left Rear Footwell/Defrost Flap Motor

(B369) - 5V Connection 1 (in main wiring harness)

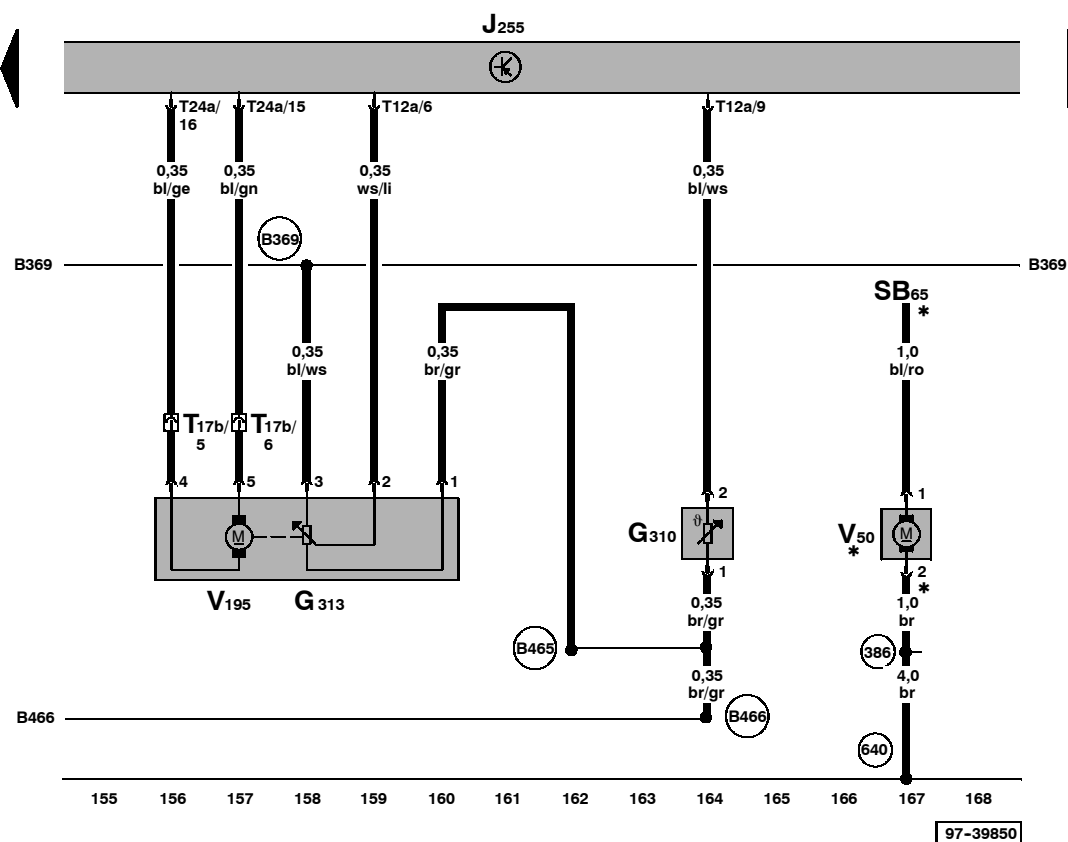
(B466) - Connection 2 (in main wiring harness)



**Climatronic Control Module, Right Rear Footwell/
Defrost Flap Motor Position Sensor, Right Rear
Footwell Temperature Sensor**

- G310 - Right Rear Footwell Temperature Sensor
 G313 - Right Rear Footwell/Defrost Flap Motor
 Position Sensor
 J255 - Climatronic Control Module
 J519 - Vehicle Electrical System Control Module
 SB65 - Fuse 65 (in fuse holder)
 T12a - 12-Pin connector
 T17b - 17-Pin connector, black, behind instrument
 panel, left
 T24a - 24-Pin connector, red
 V50 - Coolant Pump *
 V195 - Right Rear Footwell/Defrost Flap Motor

- (386) - Ground Connection 21 (in main wiring harness)
 (640) - Ground Connection (in engine compartment,
 left)
 (B369) - 5V Connection 1 (in main wiring harness)
 (B465) - Connection 1 (in main wiring harness)
 (B466) - Connection 2 (in main wiring harness)
 * - without auxiliary heater only

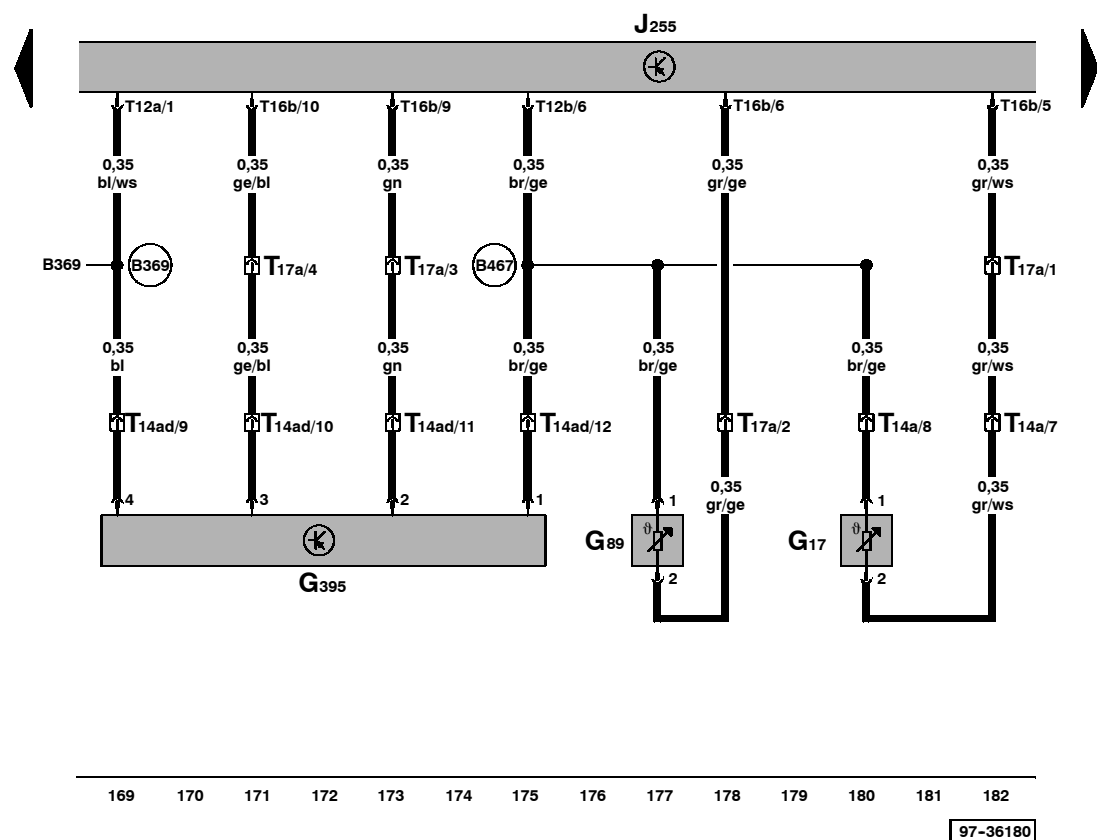


Climatronic Control Module, A/C Pressure/temperature sensor, Outside Air temperature Sensor, Fresh Air Intake Duct Temperature Sensor

- G17 - Outside Air Temperature Sensor
- G89 - Fresh Air Intake Duct Temperature Sensor
- G395 - A/C Pressure/temperature sensor
- J255 - Climatronic Control Module
- J519 - Vehicle Electrical System Control Module
- T12a - 12-Pin connector
- T12b - 12-Pin connector, black
- T14a - 14-Pin connector
- T14ad- 14-Pin connector, connector station 2 / in basic engine
- T16b - 16-Pin connector
- T17a - 17-Pin connector, grey, behind instrument panel, left

(B369) - 5V Connection 1 (in main wiring harness)

(B467) - Connection 3 (in main wiring harness)

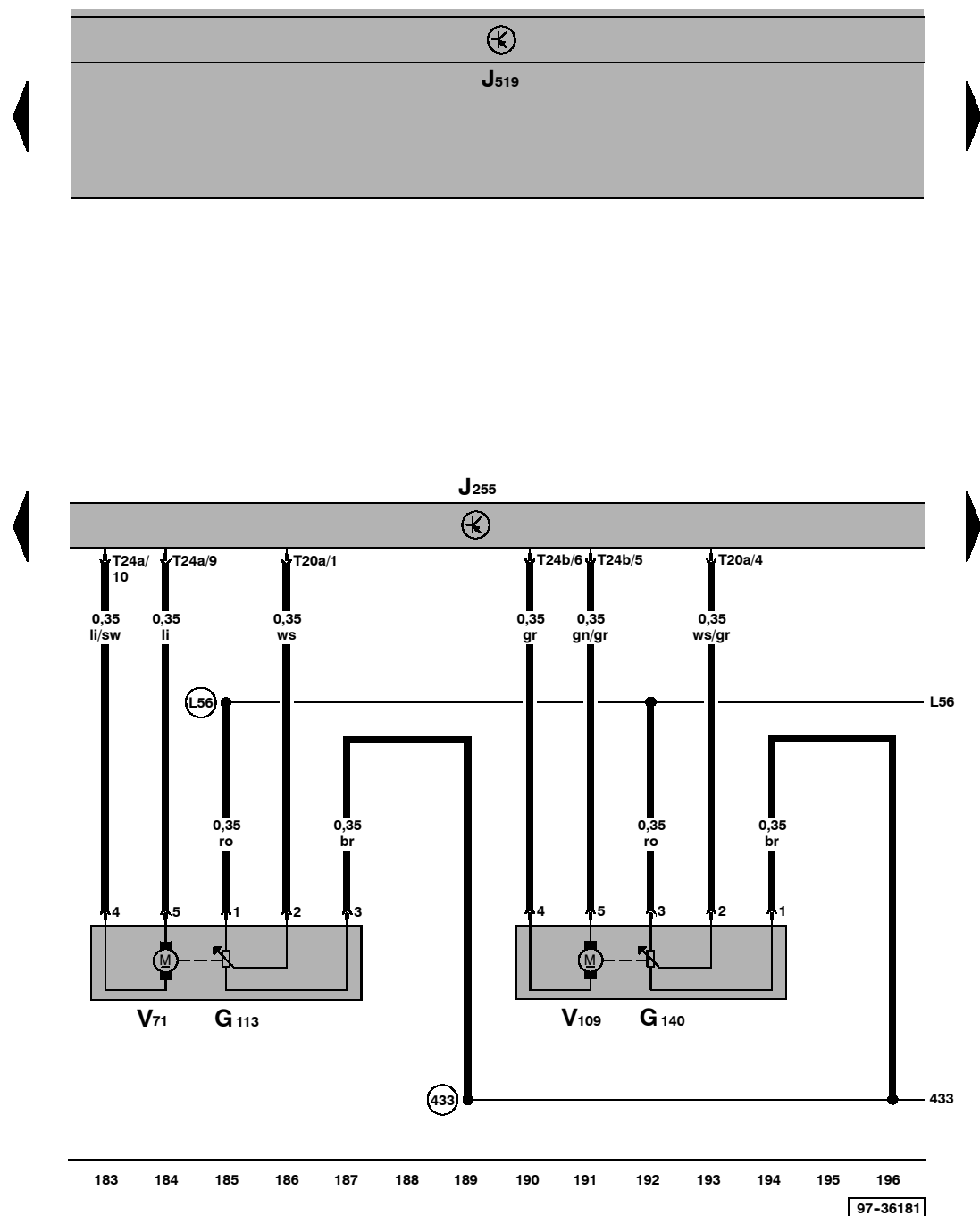


ws = white
 sw = black
 ro = red
 br = brown
 gn = green
 bl = blue
 gr = grey
 li = lilac
 ge = yellow
 or = orange

Climatronic Control Module, Back Pressure Flap Motor Position Sensor, Right Footwell Flap Motor Position Sensor

- G113 - Back Pressure Flap Motor Position Sensor
- G140 - Right Footwell Flap Motor Position Sensor
- J255 - Climatronic Control Module
- J519 - Vehicle Electrical System Control Module
- T20a - 20-Pin connector, red
- T24a - 24-Pin connector, red
- T24b - 24-Pin connector, red
- V71 - Air Flow Flap Motor
- V109 - Right Footwell Flap Motor

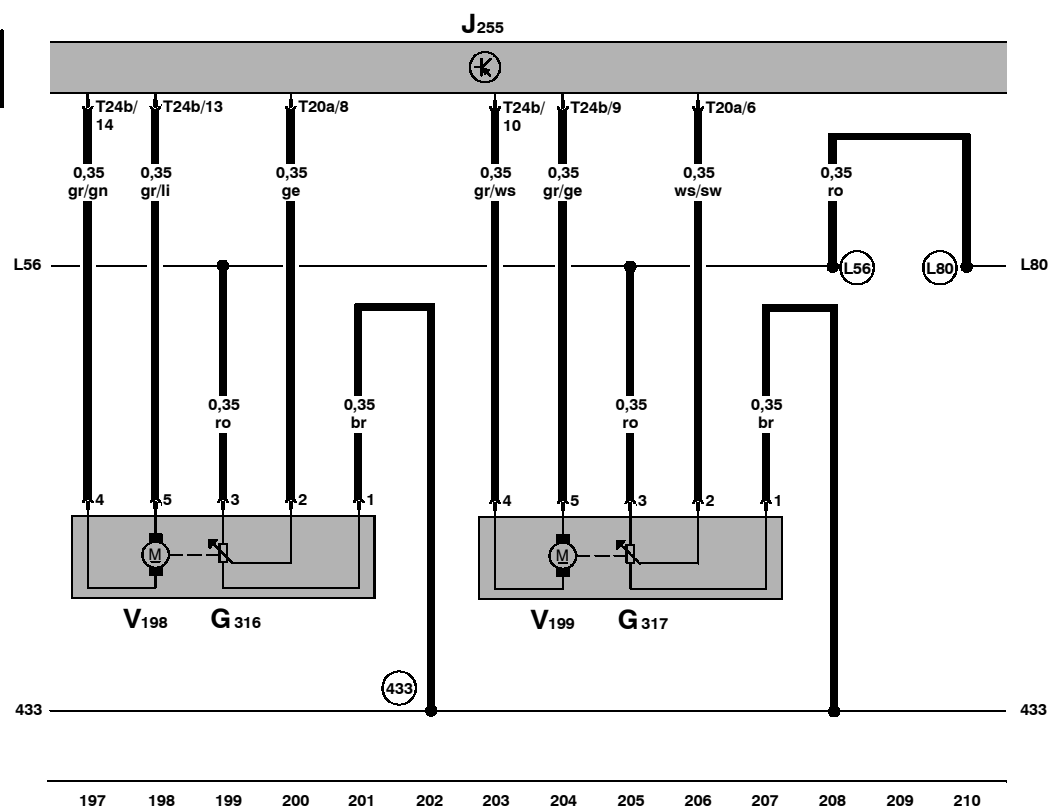
- (433) - Sensor Ground Connection 2 (in Climatronic wiring harness)
- (L56) - Connector (Sensor), in wiring harness Climatronic



Climatronic Control Module, Front Warm Air Flap Motor Position Sensor, Right Front Defrost/Upper Body Shut-off Flap Motor Position Sensor

- G316 - Front Warm Air Flap Motor Position Sensor
 G317 - Right Front Defrost/Upper Body Shut-off Flap Motor Position Sensor
 J255 - Climatronic Control Module
 J519 - Vehicle Electrical System Control Module
 T20a - 20-Pin connector, red
 T24b - 24-Pin connector, red
 V198 - Front Warm Air Flap Motor
 V199 - Right Front Defrost/Upper Body Shut-off Flap Motor

- (433) - Sensor Ground Connection 2 (in Climatronic wiring harness)
 (L56) - Connector (Sensor), in wiring harness Climatronic
 (L80) - Sensor Connection 3 (in Climatronic wiring harness)

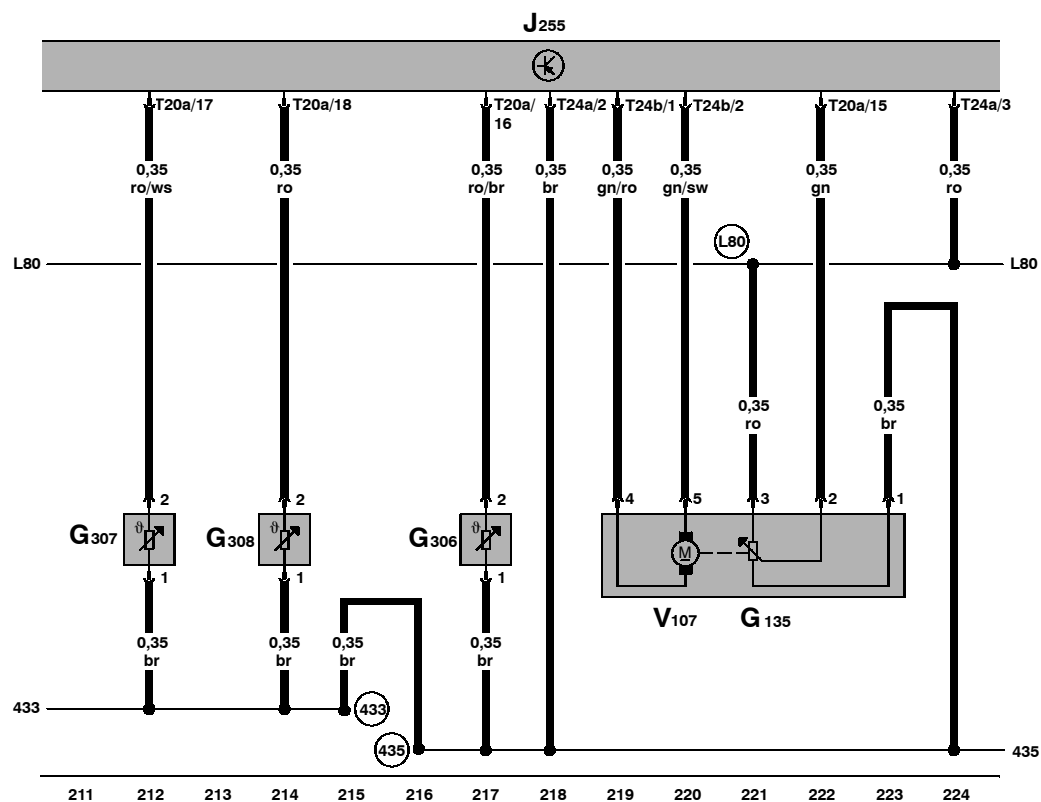


ws = white
 sw = black
 ro = red
 br = brown
 gn = green
 bl = blue
 gr = grey
 li = lilac
 ge = yellow
 or = orange

**Climatronic Control Module, Defroster Flap Motor
Position Sensor, Left Heater and Right Heater Core
Temperature Sensor**

- G135 - Defroster Flap Motor Position Sensor
 G306 - Left Heater Core Temperature Sensor
 G307 - Right Heater Core Temperature Sensor
 G308 - Evaporator Temperature Sensor
 J255 - Climatronic Control Module
 J519 - Vehicle Electrical System Control Module
 T20a - 20-Pin connector, red
 T24a - 24-Pin connector, red
 T24b - 24-Pin connector, red
 V107 - Defroster Flap Motor

- (433) - Sensor Ground Connection 2 (in Climatronic wiring harness)
 (435) - Sensor Ground Connection 4 (in Climatronic wiring harness)
 (L80) - Sensor Connection 3 (in Climatronic wiring harness)

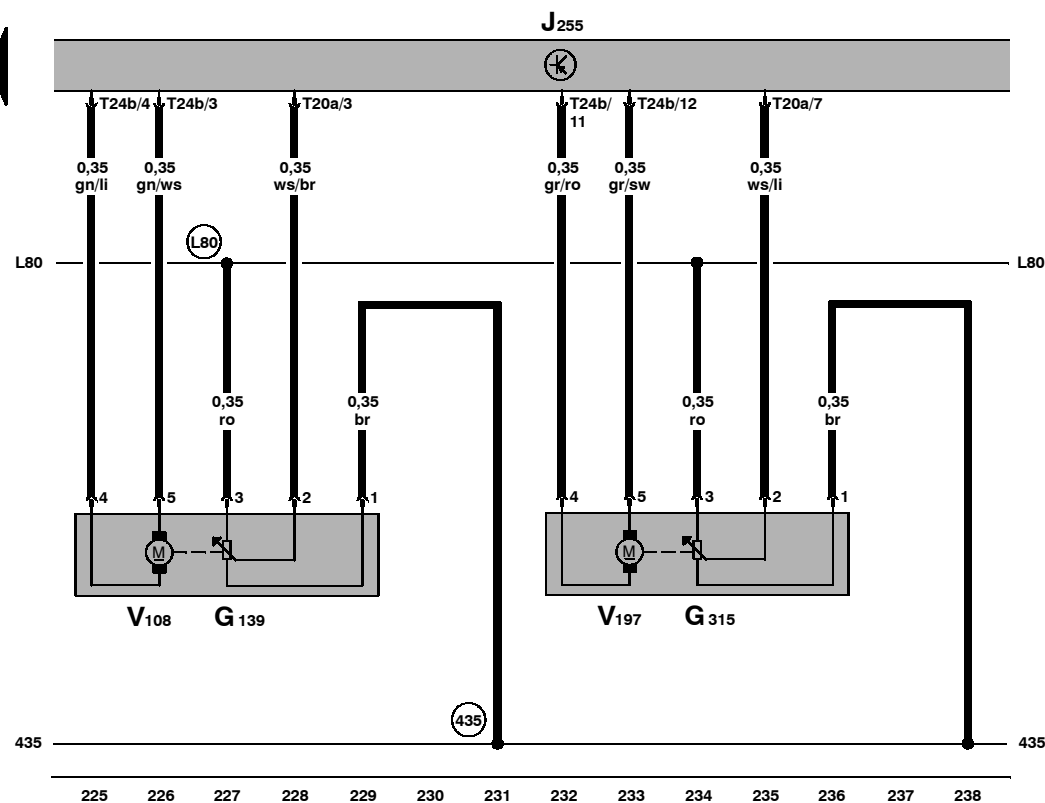


ws = white
 sw = black
 ro = red
 br = brown
 gn = green
 bl = blue
 gr = grey
 li = lilac
 ge = yellow
 or = orange

Climatronic Control Module, Left Footwell Flap Motor Position Sensor, Front Cold Air Flap Motor Position Sensor

- G139 - Left Footwell Flap Motor Position Sensor
 G315 - Front Cold Air Flap Motor Position Sensor
 J255 - Climatronic Control Module
 J519 - Vehicle Electrical System Control Module
 T20a - 20-Pin connector, red
 T24b - 24-Pin connector, red
 V108 - Left Footwell Flap Motor
 V197 - Front Cold Air Flap Motor

- (435) - Sensor Ground Connection 4 (in Climatronic wiring harness)
 (L80) - Sensor Connection 3 (in Climatronic wiring harness)

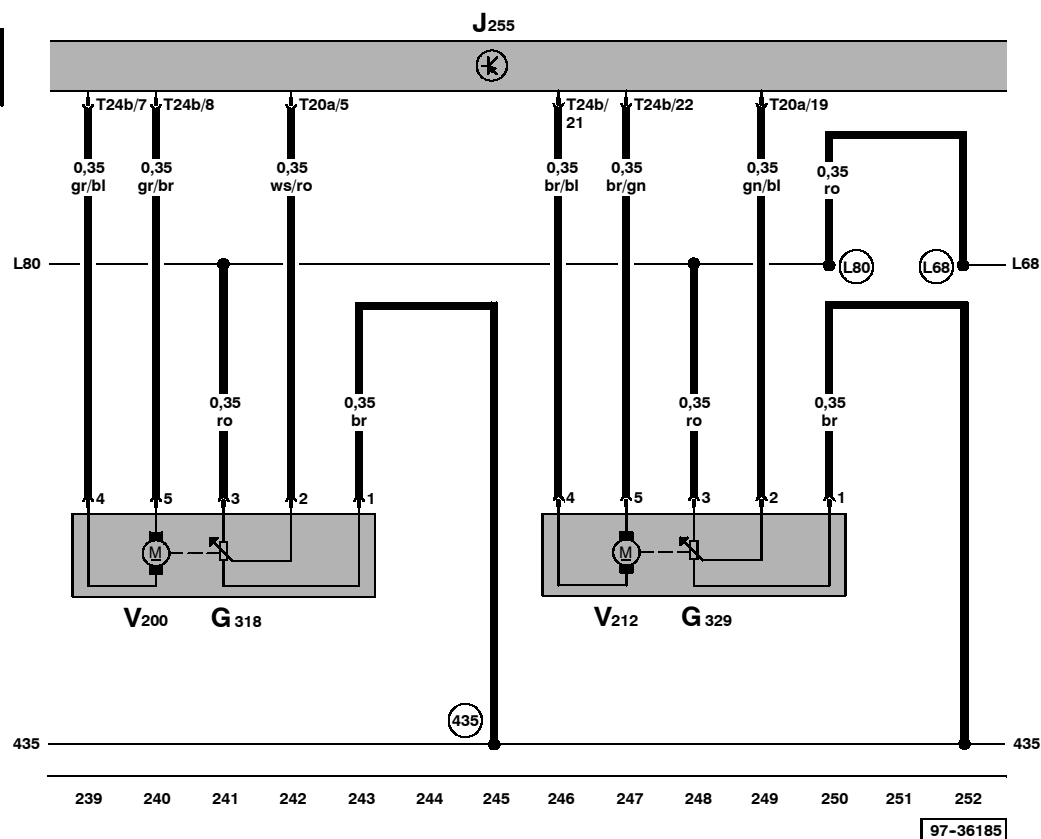


ws = white
 sw = black
 ro = red
 br = brown
 gn = green
 bl = blue
 gr = grey
 li = lilac
 ge = yellow
 or = orange

Climatronic Control Module, Left Front Defrost/Upper Body Shut-off Flap Motor Position Sensor, Left B-pillar/Footwell Shut-off Flap Motor Position Sensor

- G318 - Left Front Defrost/Upper Body Shut-off Flap Motor Position Sensor
 G329 - Left B-Pillar/Footwell Shut-off Flap Motor Position Sensor
 J255 - Climatronic Control Module
 J519 - Vehicle Electrical System Control Module
 T20a - 20-Pin connector, red
 T24b - 24-Pin connector, red
 V200 - Left Front Defrost/Upper Body Shut-off Flap Motor
 V212 - Left B-Pillar/Footwell Shut-off Flap Motor

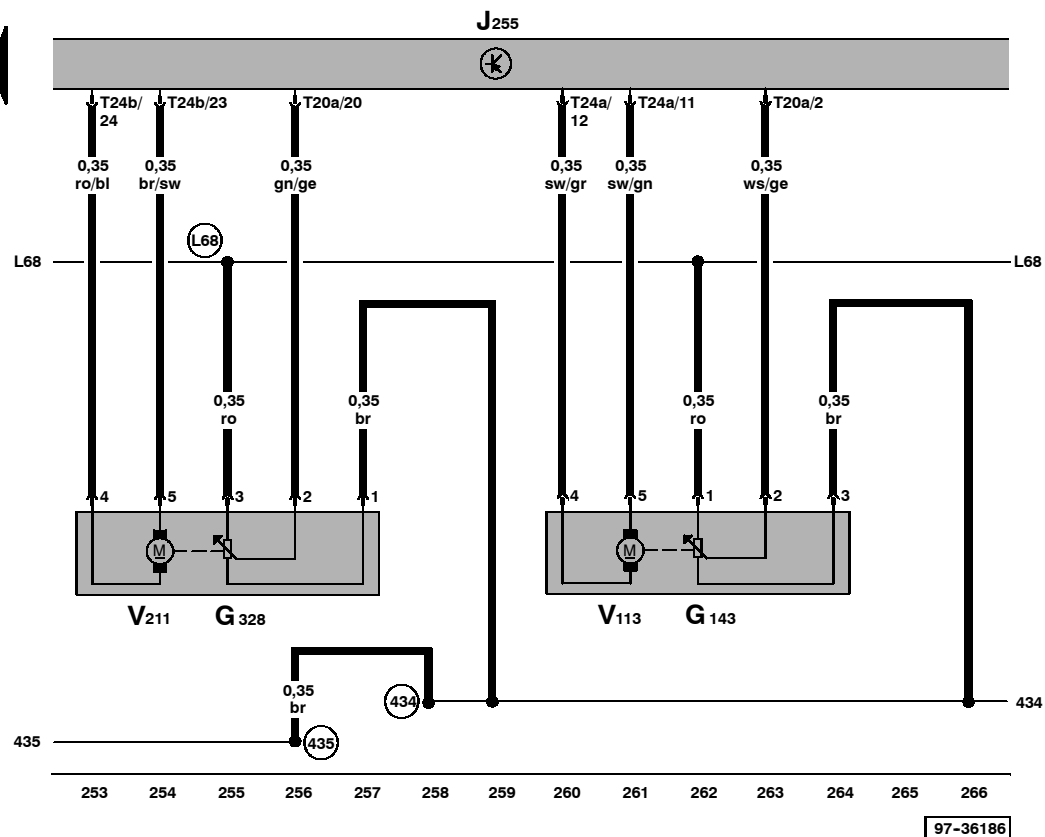
- (435) - Sensor Ground Connection 4 (in Climatronic wiring harness)
 (L68) - Connection 2 (sensor) in Climatronic wiring harness
 (L80) - Sensor Connection 3 (in Climatronic wiring harness)



Climatronic Control Module, Recirculation Flap Motor Position Sensor, Right B-Pillar/Footwell Shut-off Flap Motor Position Sensor

- G143 - Recirculation Flap Motor Position Sensor
 G328 - Right B-Pillar/Footwell Shut-off Flap Motor Position Sensor
 J255 - Climatronic Control Module
 J519 - Vehicle Electrical System Control Module
 T20a - 20-Pin connector, red
 T24a - 24-Pin connector, red
 T24b - 24-Pin connector, red
 V113 - Recirculation Flap Motor
 V211 - Right B-Pillar/Footwell Shut-off Flap Motor

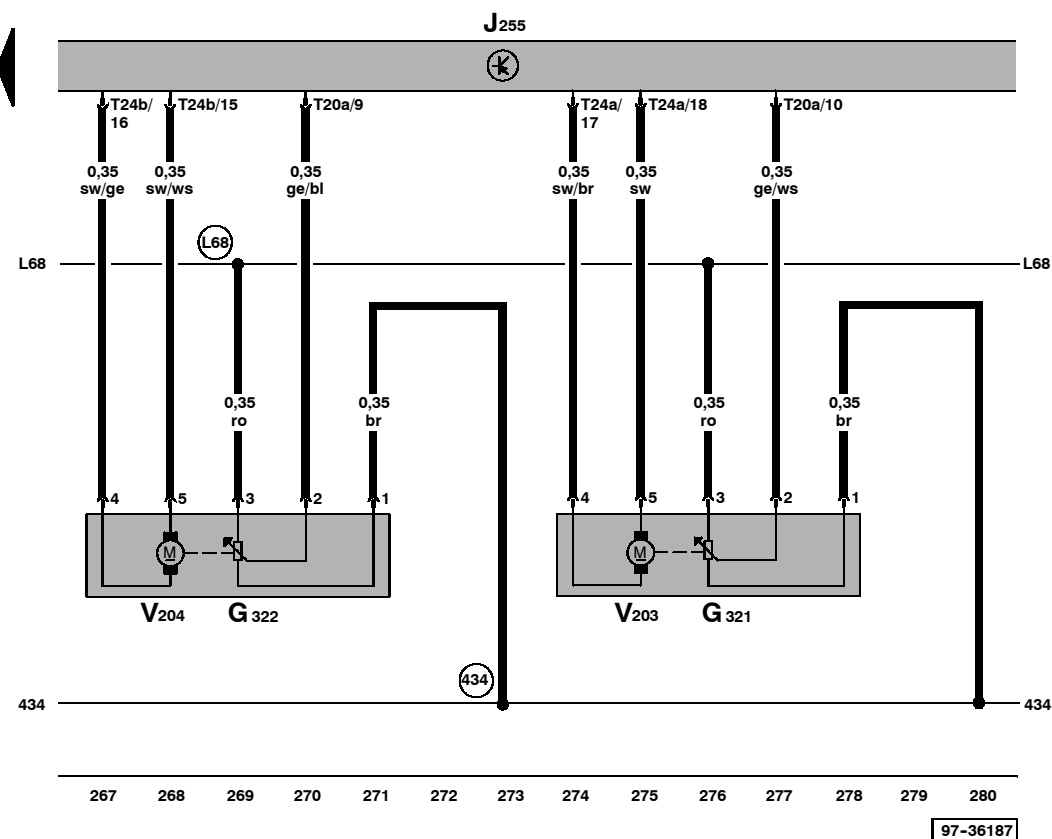
- (434) - Sensor Ground Connection 3 (in Climatronic wiring harness)
 (435) - Sensor Ground Connection 4 (in Climatronic wiring harness)
 (L68) - Connection 2 (sensor) in Climatronic wiring harness



Climatronic Control Module, Right Rear and Left Rear Center Console Cold Air Flap Motor Position Sensor

- G321 - Right Rear Center Console Cold Air Flap Motor Position Sensor
- G322 - Left Rear Center Console Cold Air Flap Motor Position Sensor
- J255 - Climatronic Control Module
- J519 - Vehicle Electrical System Control Module
- T20a - 20-Pin connector, red
- T24a - 24-Pin connector, red
- T24b - 24-Pin connector, red
- V203 - Right Rear Center Console Cold Air Flap Motor
- V204 - Left Rear Center Console Cold Air Flap Motor

- (434) - Sensor Ground Connection 3 (in Climatronic wiring harness)
- (L68) - Connection 2 (sensor) in Climatronic wiring harness

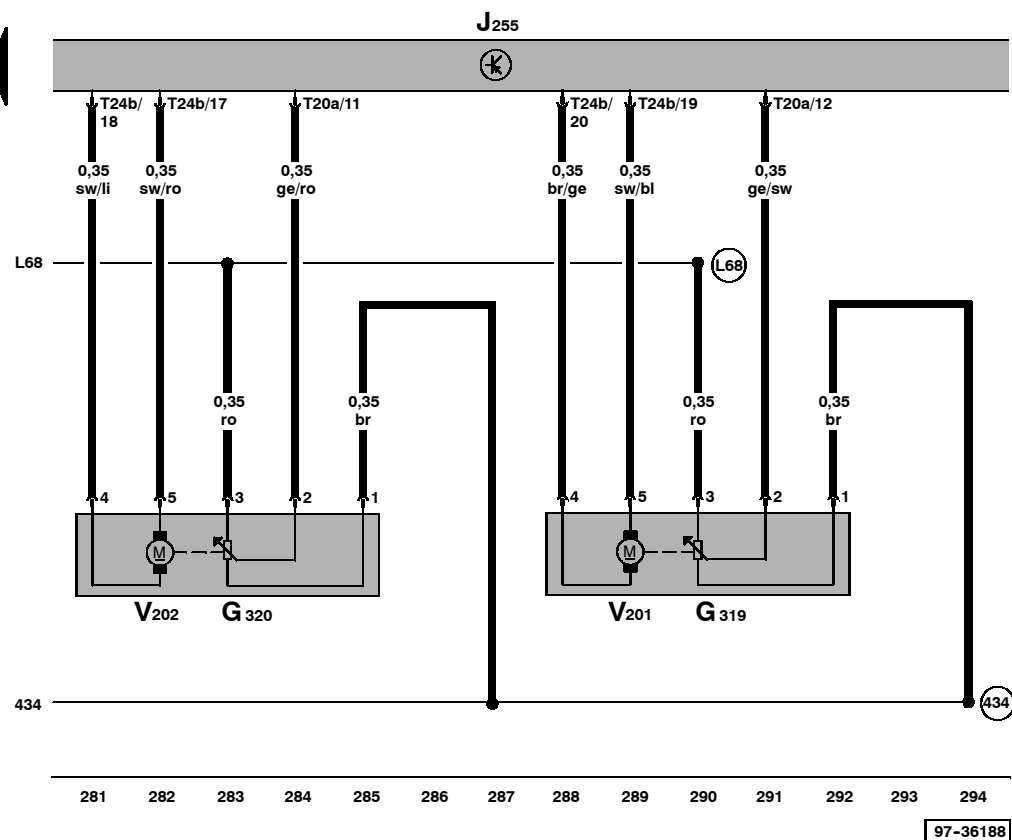


ws = white
 sw = black
 ro = red
 br = brown
 gn = green
 bl = blue
 gr = grey
 li = lilac
 ge = yellow
 or = orange

Climatronic Control Module, Right Rear and Left Rear Center Console Warm Air Flap Motor Position Sensor

- G319 - Right Rear Center Console Warm Air Flap Motor Position Sensor
 G320 - Left Rear Center Console Warm Air Flap Motor Position Sensor
 J255 - Climatronic Control Module
 J519 - Vehicle Electrical System Control Module
 T20a - 20-Pin connector, red
 T24b - 24-Pin connector, red
 V201 - Right Rear Center Console Warm Air Flap Motor
 V202 - Left Rear Center Console Warm Air Flap Motor

- (434) - Sensor Ground Connection 3 (in Climatronic wiring harness)
 (L68) - Connection 2 (sensor) in Climatronic wiring harness

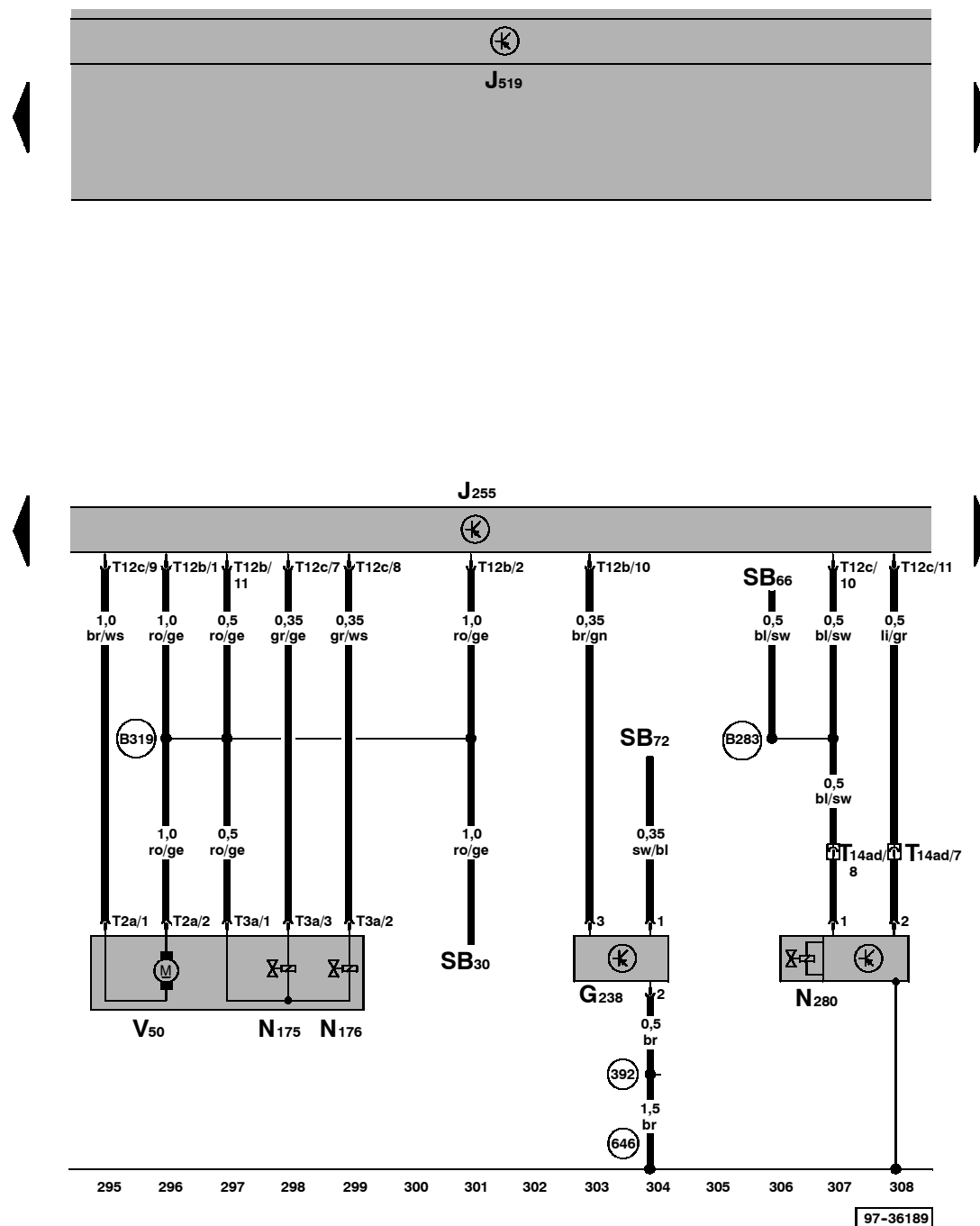


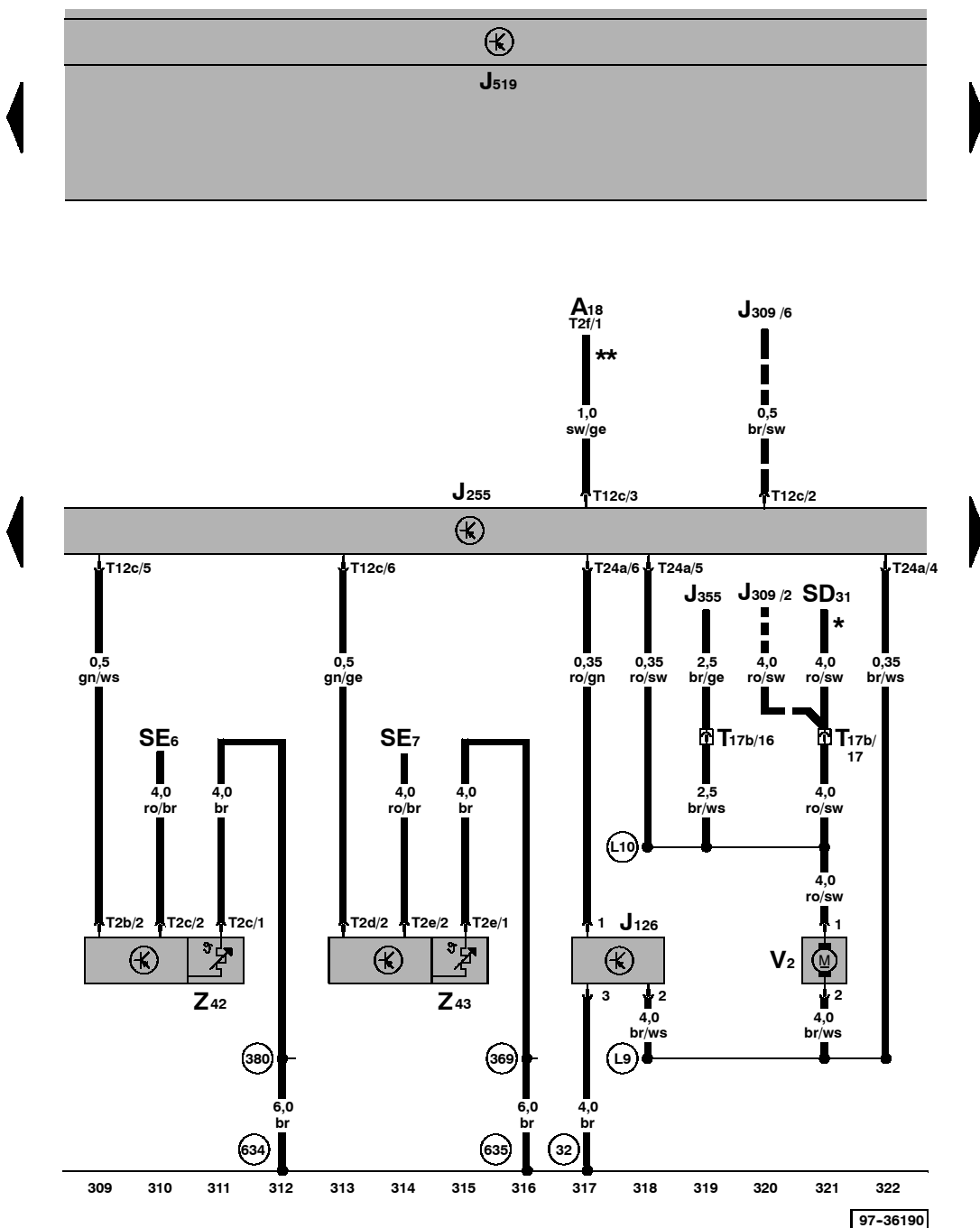
Climatronic Control Module, Left and Right Heat Regulating Valve, Coolant Pump, Sensor for air quality, A/C Compressor Regulator Valve

- G238 - Sensor for air quality
 J255 - Climatronic Control Module
 J519 - Vehicle Electrical System Control Module
 N175 - Left Heat Regulating Valve
 N176 - Right Heat Regulating Valve
 N280 - A/C Compressor Regulator Valve
 SB30 - Fuse 30 (in fuse holder)
 SB66 - Fuse 66 (in fuse holder)
 SB72 - Fuse 72 (in fuse holder)
 T2a - 2-Pin connector
 T3a - 3-Pin connector
 T12b - 12-Pin connector, black
 T12c - 12-Pin connector, brown
 T14ad - 14-Pin connector, connector station 2 / in basic engine
 V50 - Coolant Pump

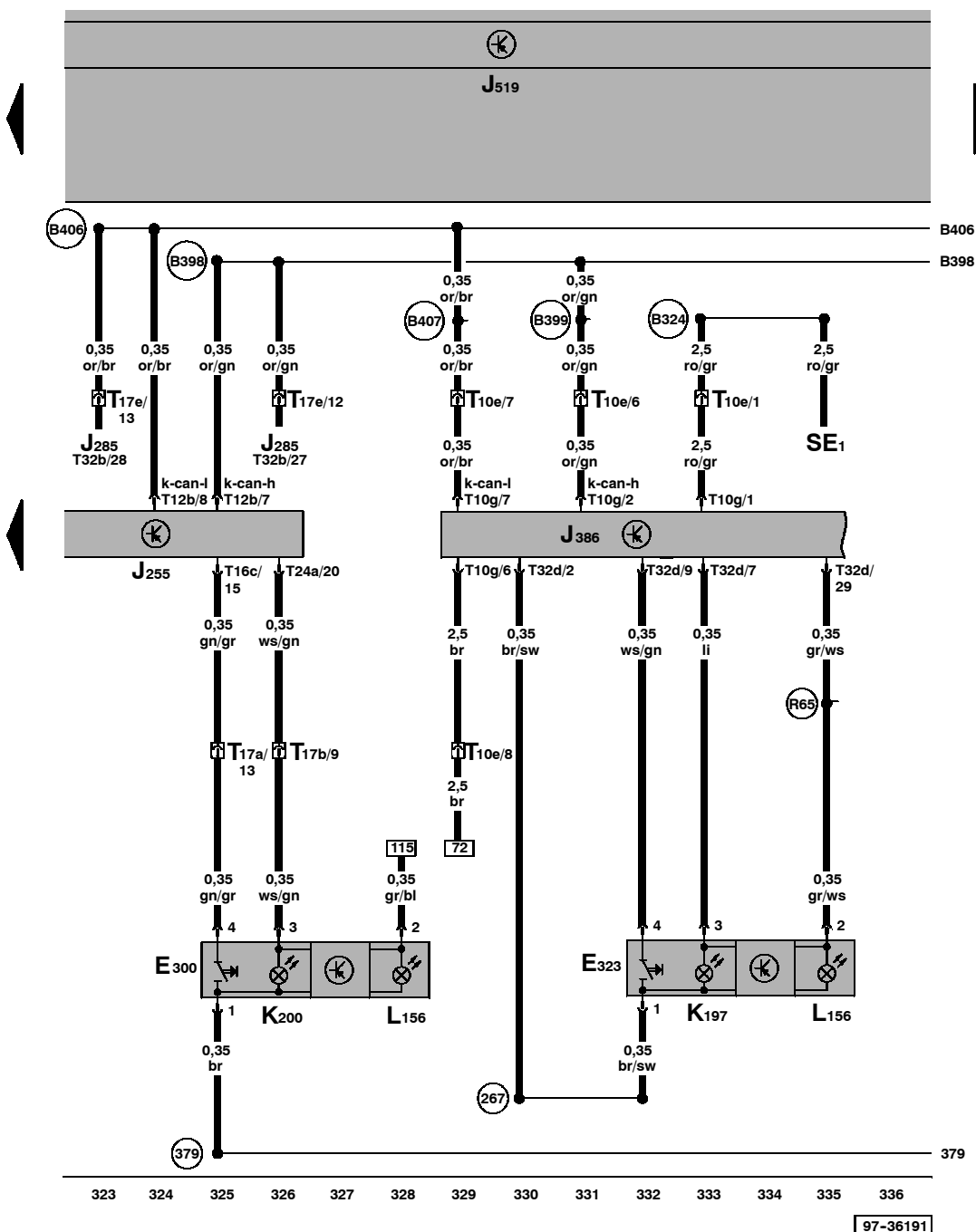
- (392) - Ground Connection 27 (in main wiring harness)
 (646) - Ground Connection 2 (on firewall)
 (B283) - Plus Connection 7 (15a) (in main wiring harness)
 (B319) - Plus Connection 5 (30a) (in main wiring harness)

ws = white
 sw = black
 ro = red
 br = brown
 gn = green
 bl = blue
 gr = grey
 li = lilac
 ge = yellow
 or = orange



Climatronic Control Module, Control Module for fresh air blower, Left and Right Rear Footwell Heater, Fresh Rear Footwell Heater


- A18 - Windshield Heating Voltage Converter **
- J126 - Control module for fresh air blower
- J255 - Climatronic Control Module
- J309 - Solar Cell Separation Relay
- J355 - Control module for solar operation
- J519 - Vehicle Electrical System Control Module
- SD31 - Fuse 31 (on fuse holder) *
- SE6 - Thermofuse 6 (on fuse holder)
- SE7 - Thermofuse 7 (on fuse holder)
- T2b - 2-Pin connector
- T2c - 2-Pin connector
- T2d - 2-Pin connector
- T2e - 2-Pin connector
- T2f - 2-Pin connector, behind instrument panel, left
- T12c - 12-Pin connector, brown
- T17b - 17-Pin connector, black, behind instrument panel, left
- T24a - 24-Pin connector, red
- V2 - Fresh Air Blower
- Z42 - Left Rear Footwell Heater
- Z43 - Right Rear Footwell Heater

Climatronic Control Module, Door control module, driver side, Right Rear and Driver's Defrost Button


ws = white
 sw = black
 ro = red
 br = brown
 gn = green
 bl = blue
 gr = grey
 li = lilac
 ge = yellow
 or = orange

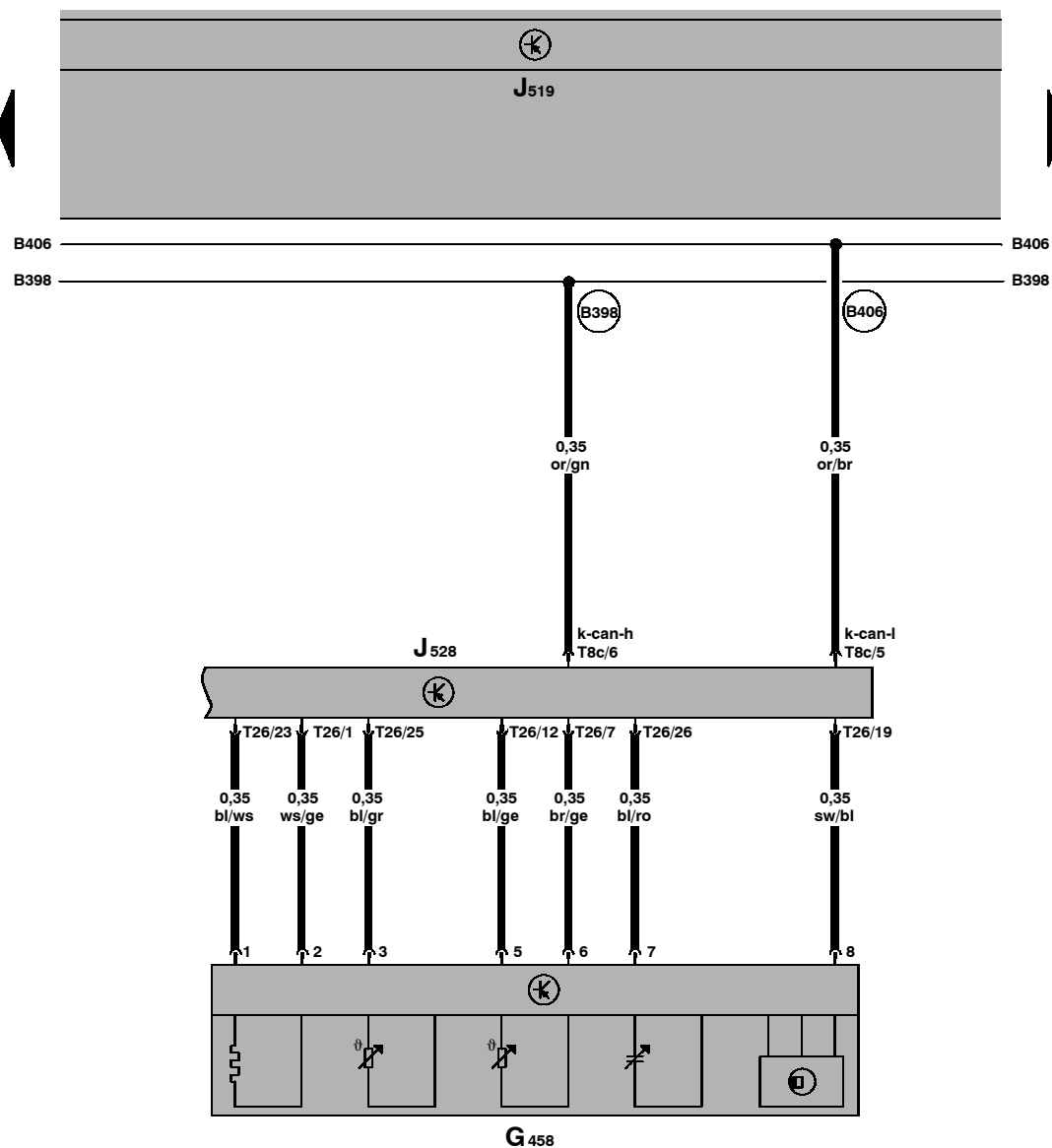
- E300 - Right Rear Defrost Button
- E323 - Driver's Defroster Button
- J255 - Climatronic Control Module
- J285 - Control module with indicator unit in instrument panel insert
- J386 - Door control module, driver side
- J519 - Vehicle Electrical System Control Module
- K197 - Left Front Defrost Indicator Lamp
- K200 - Right Rear Defrost Indicator Lamp
- L156 - Switch Illumination Lamp
- SE1 - Thermofuse 1 (on fuse holder)
- T10e - 10-Pin connector, black, connector station A-pillar, left
- T10g - 10-Pin connector
- T12b - 12-Pin connector, black
- T16c - 16-Pin connector
- T17a - 17-Pin connector, grey, behind instrument panel, left
- T17b - 17-Pin connector, black, behind instrument panel, left
- T17e - 17-Pin connector, blue, behind instrument panel, left
- T24a - 24-Pin connector, red
- T32b - 32-Pin connector, green, on instrument cluster
- T32d - 32-Pin connector

- (267) - Ground connector -2-, in wiring harness door cable - driver side
- (379) - Ground Connection 14 (in main wiring harness)
- (B324) - Plus Connection 10 (30a) (in main wiring harness)
- (B398) - Comfort System CAN-Bus High Connection 2 (in main wiring harness)
- (B399) - Comfort System CAN-Bus High Connection 3 (in main wiring harness)
- (B406) - Comfort System CAN-Bus Low Connection 1 (in main wiring harness)
- (B407) - Comfort System CAN-Bus Low Connection 2 (in main wiring harness)
- (R65) - Plus Connection (58) (in driver's door wiring harness)

Roof Electronics Control Module, Windshield Moisture/Temperature Sensor

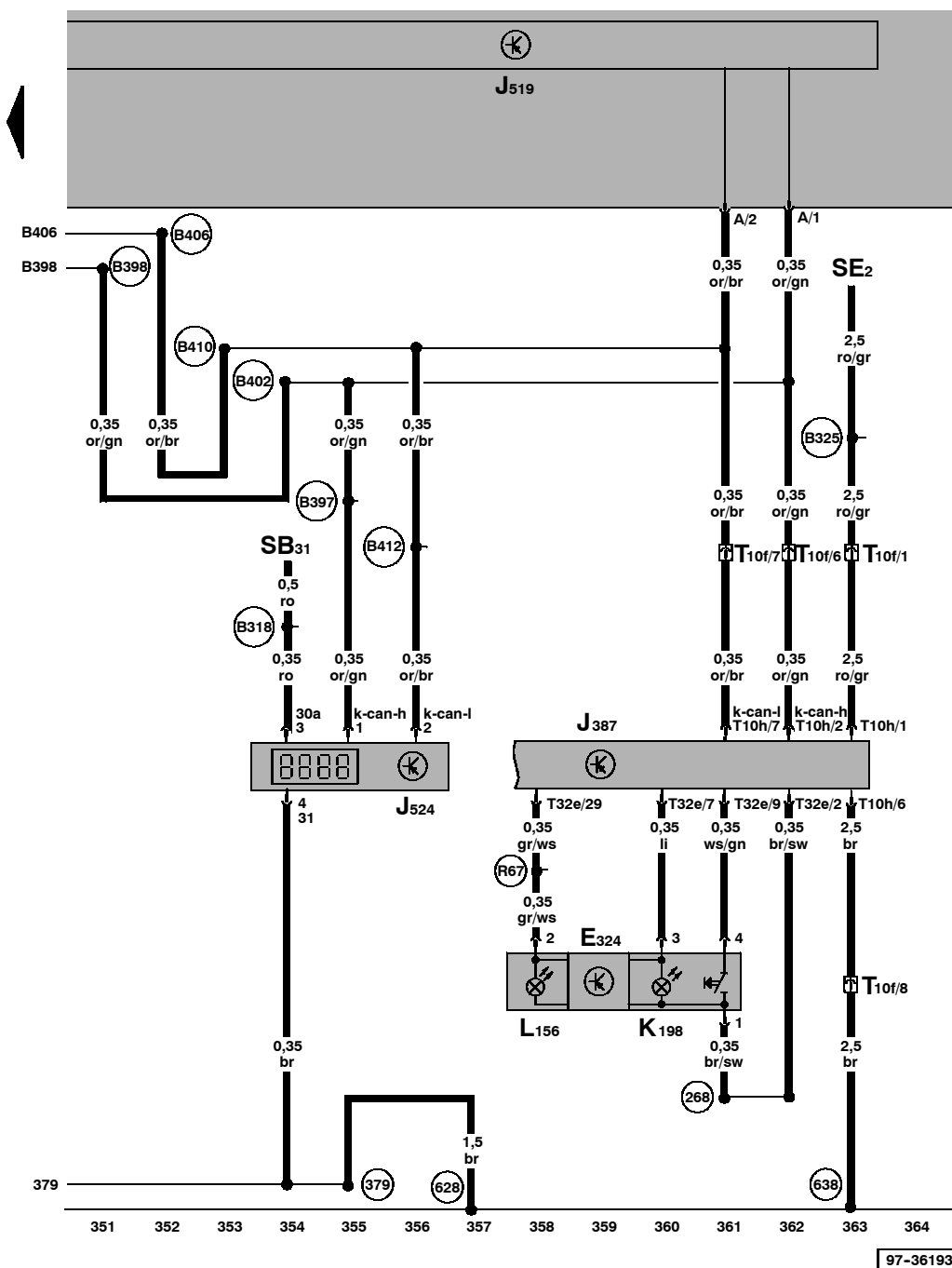
G458 - Windshield Moisture/Temperature Sensor
 J519 - Vehicle Electrical System Control Module
 J528 - Roof Electronics Control Module
 T8c - 8-Pin connector
 T26 - 26-Pin connector

(B398) - Comfort System CAN-Bus High Connection 2
 (in main wiring harness)
 (B406) - Comfort System CAN-Bus Low Connection 1
 (in main wiring harness)



337 338 339 340 341 342 343 344 345 346 347 348 349 350

97-36192



**Door control module, Rear Information Display
Control Head, Front Passenger's Defrost Button**

- E324 - Front Passenger's Defroster Button
- J387 - Door control module, passenger side
- J519 - Vehicle Electrical System Control Module
- J524 - Rear Information Display Control Head
- K198 - Right Front Defrost Indicator Lamp
- L156 - Switch Illumination Lamp
- SB31- Fuse 31 (in fuse holder)
- SE2 - Thermofuse 2 (on fuse holder)
- T10f - 10-Pin connector, connector station A-pillar, right
- T10h - 10-Pin connector
- T32e - 32-Pin connector
- (268)** - Ground connector -2-, in wiring harness door cable - passenger side
- (379)** - Ground Connection 14 (in main wiring harness)
- (628)** - Ground Connection 2 (seat control module)
- (638)** - Ground Connection (on right A-pillar)
- (B318)** - Plus Connection 4 (30a) (in main wiring harness)
- (B325)** - Plus Connection 11 (30a) (in main wiring harness)
- (B397)** - Comfort System CAN-Bus High Connection 1 (in main wiring harness)
- (B398)** - Comfort System CAN-Bus High Connection 2 (in main wiring harness)
- (B402)** - Comfort System CAN-Bus High Connection 6 (in main wiring harness)
- (B406)** - Comfort System CAN-Bus Low Connection 1 (in main wiring harness)
- (B410)** - Comfort System CAN-Bus Low Connection 5 (in main wiring harness)
- (B412)** - Comfort System CAN-Bus Low Connection 7 (in main wiring harness)
- (R67)** - Plus Connection (58) (in door wiring assembly harness, right)

ws = white
sw = black
ro = red
br = brown
gn = green
bl = blue
gr = grey
li = lilac
ge = yellow
or = orange