

4.2L - Engine - Motronic Multiport Fuel Injection (MFI)/ 246 kW, code BGH, BGJ,

from June 2003

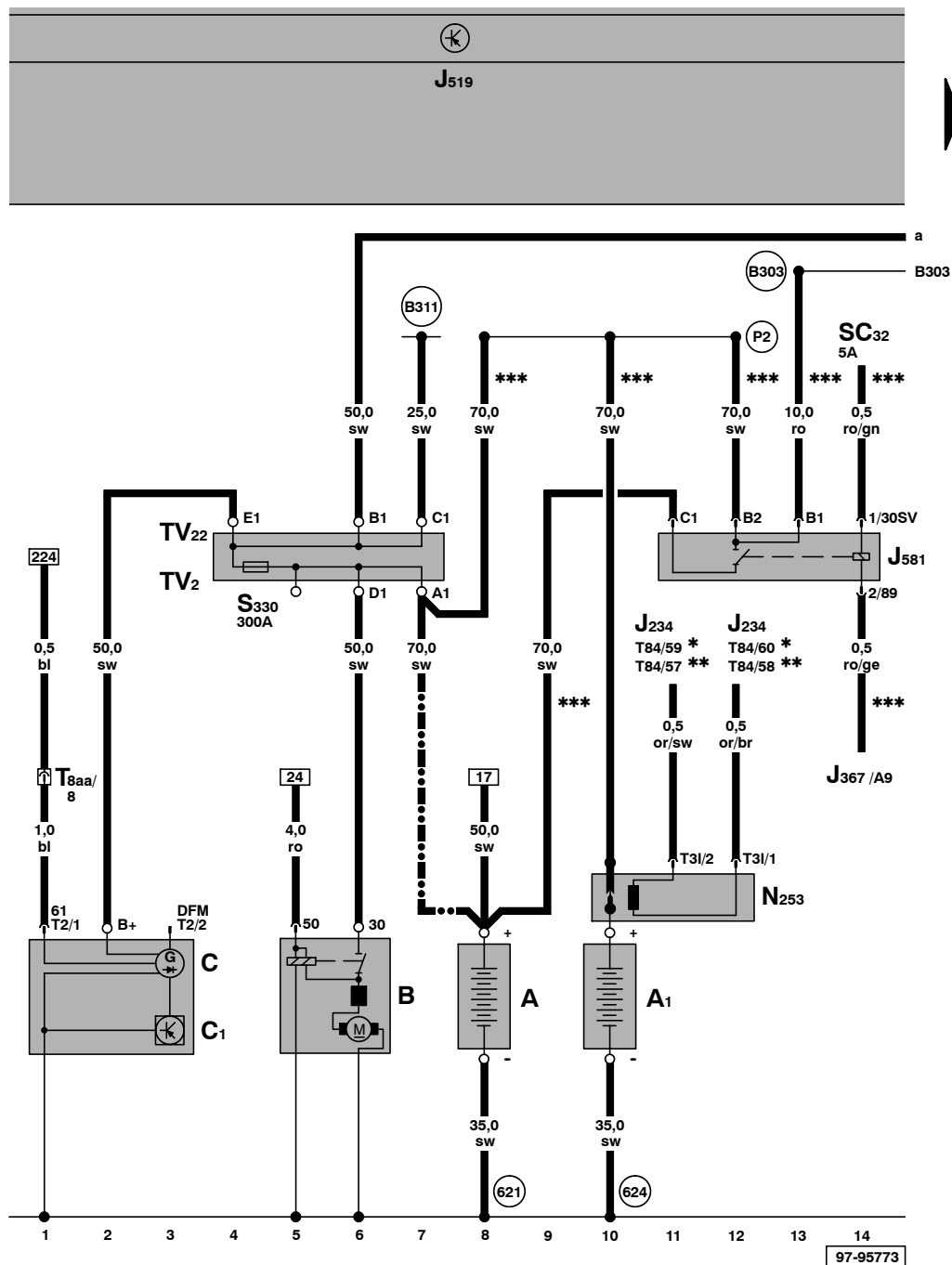
Note:

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*



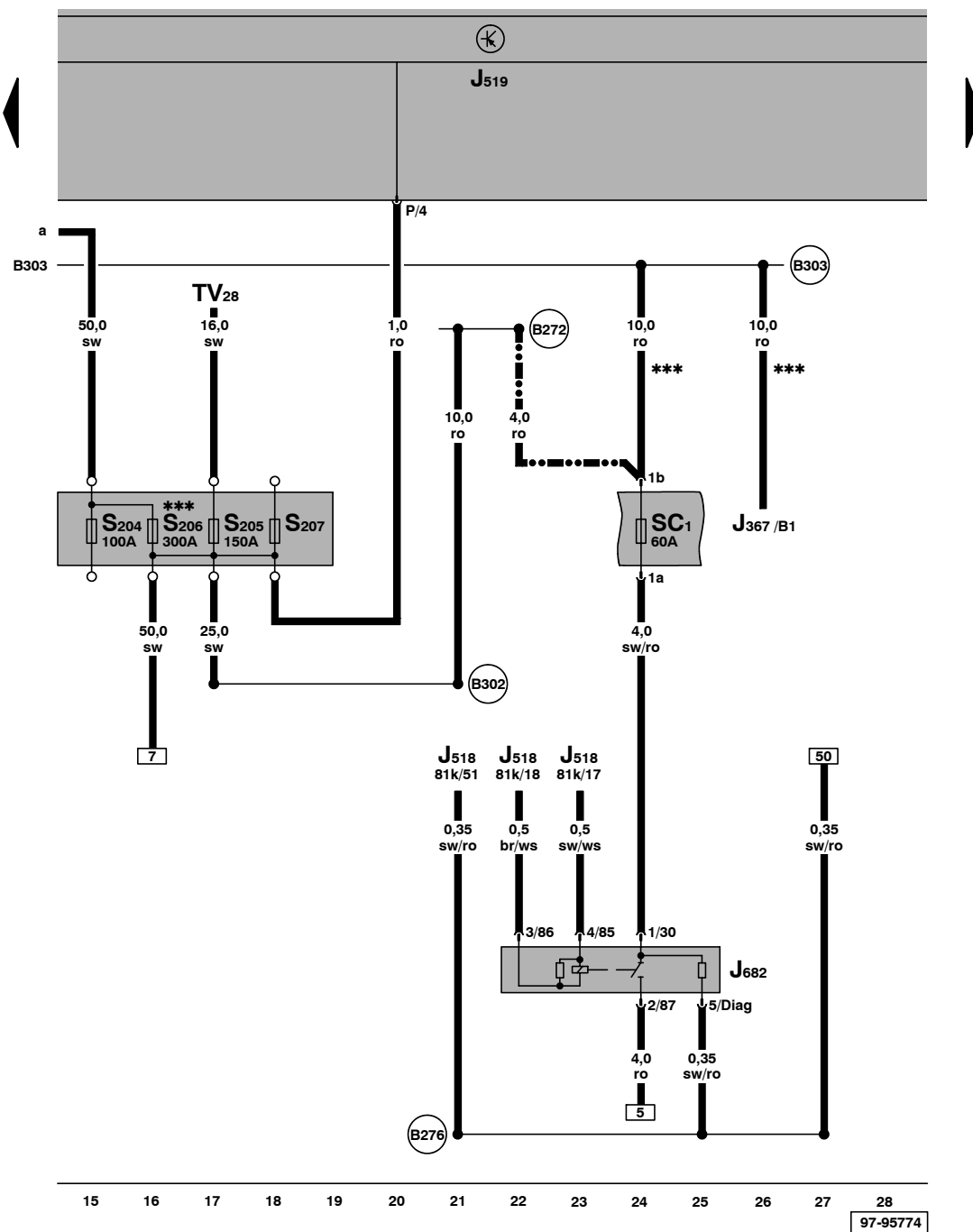
Battery, Auxiliary Battery, Starter, Generator (GEN), Parallel Battery Connection Relay, Battery Interrupt Igniter

- A - Battery
- A1 - Auxiliary Battery
- B - Starter
- C - Generator (GEN)
- C1 - Voltage Regulator (VR)
- J234 - Airbag Control Module
- J367 - Battery Monitoring Control Module
- J519 - Vehicle Electrical System Control Module
- J581 - Parallel Battery Connection Relay
- N253 - Battery Interrupt Igniter
- S330 - Fuse in Wire Junction (vehicles with single battery system only)
- SC32 - Fuse 32 (on fuse panel C)
- T2 - Double Connector
- T8aa - 8-Pin Connector, connector station 3/ in basic engine harness
- T3I - 3-Pin Connector
- T84 - 84-Pin Connector
- TV2 - Terminal 30 Wire Junction
- TV22 - Terminal 30 Wire Junction 2

- 621 - Ground Connection (near electrical system battery)
- 624 - Ground Connection (near starter battery)
- B303 - Plus Connection 7 (30) (in main wiring harness)
- B311 - Plus Connection 15 (30) (in main wiring harness)
- P2 - Plus Connection (30) (in battery wiring harness)

- * - From May 2005
- ** - Trough April 2005
- *** - Vehicles with dual battery system
- - Vehicles with single battery system

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 sw = black
 ro = red
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 li = lilac
 ge = yellow
 or = orange

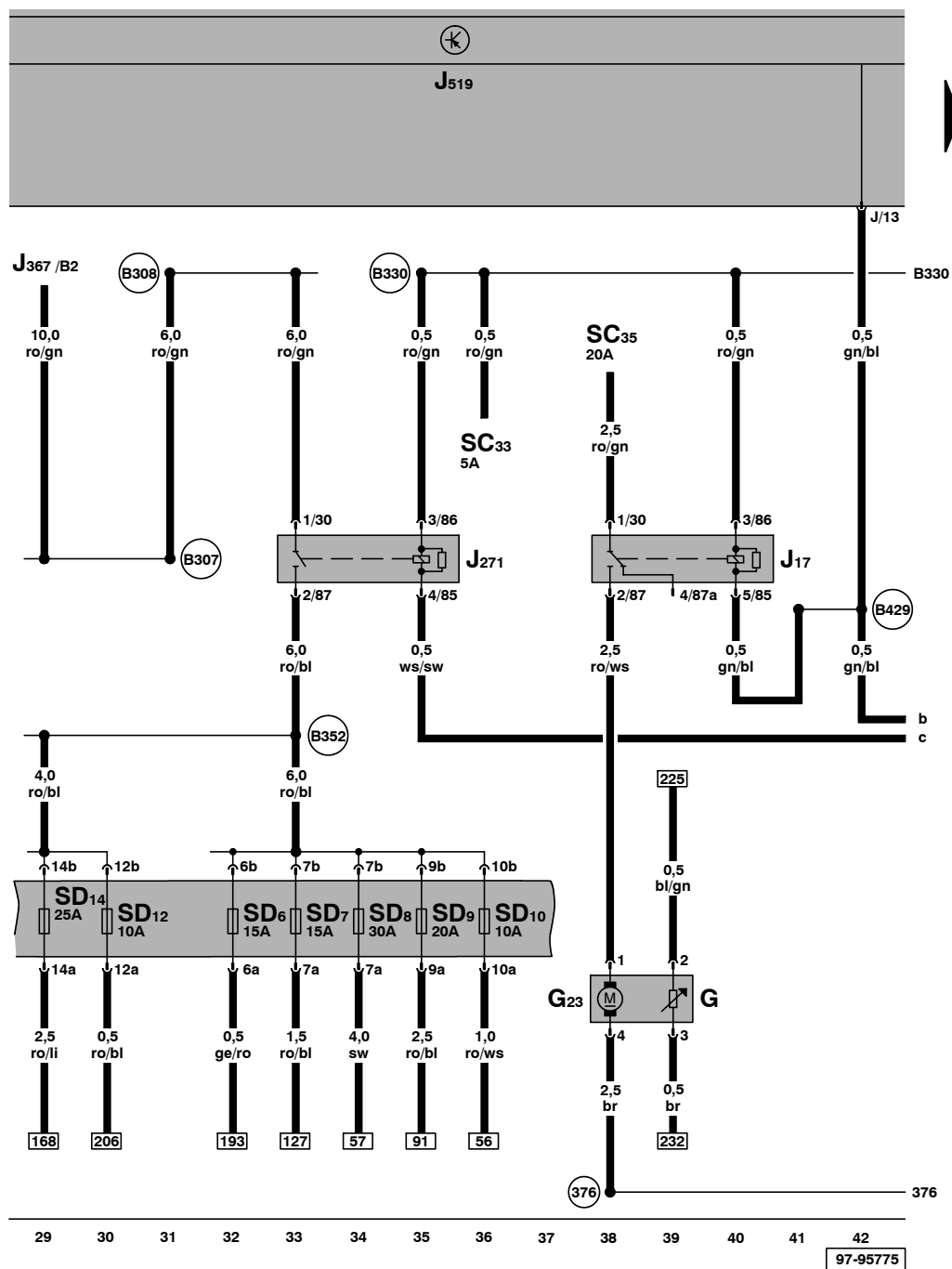


Power Supply Relay (terminal 50), fuse S204, S205, S206, S207, SC1

J367 - Battery Monitoring Control Module
 J518 - Access/Start Control Module
 J519 - Vehicle Electrical System Control Module
 J682 - Power Supply Relay (terminal 50)
 S204 - Fuse 1 - terminal 30
 S205 - Fuse 2 - terminal 30
 S206 - Fuse 3 - terminal 30
 S207 - Fuse 4 - terminal 30
 SC1 - Fuse 1 (on fuse panel C)
 T81k - 81-Pin Connector
 TV28 - Terminal 30 Wire Junction 3

(B722) - Plus Connection (30) (in main wiring harness)
 (B276) - Plus Connection (50) (in main wiring harness)
 (B302) - Plus Connection 6 (30) (in main wiring harness)
 (B303) - Plus Connection 7 (30) (in main wiring harness)

*** - Vehicles with dual battery system
 --- - Vehicles single battery system

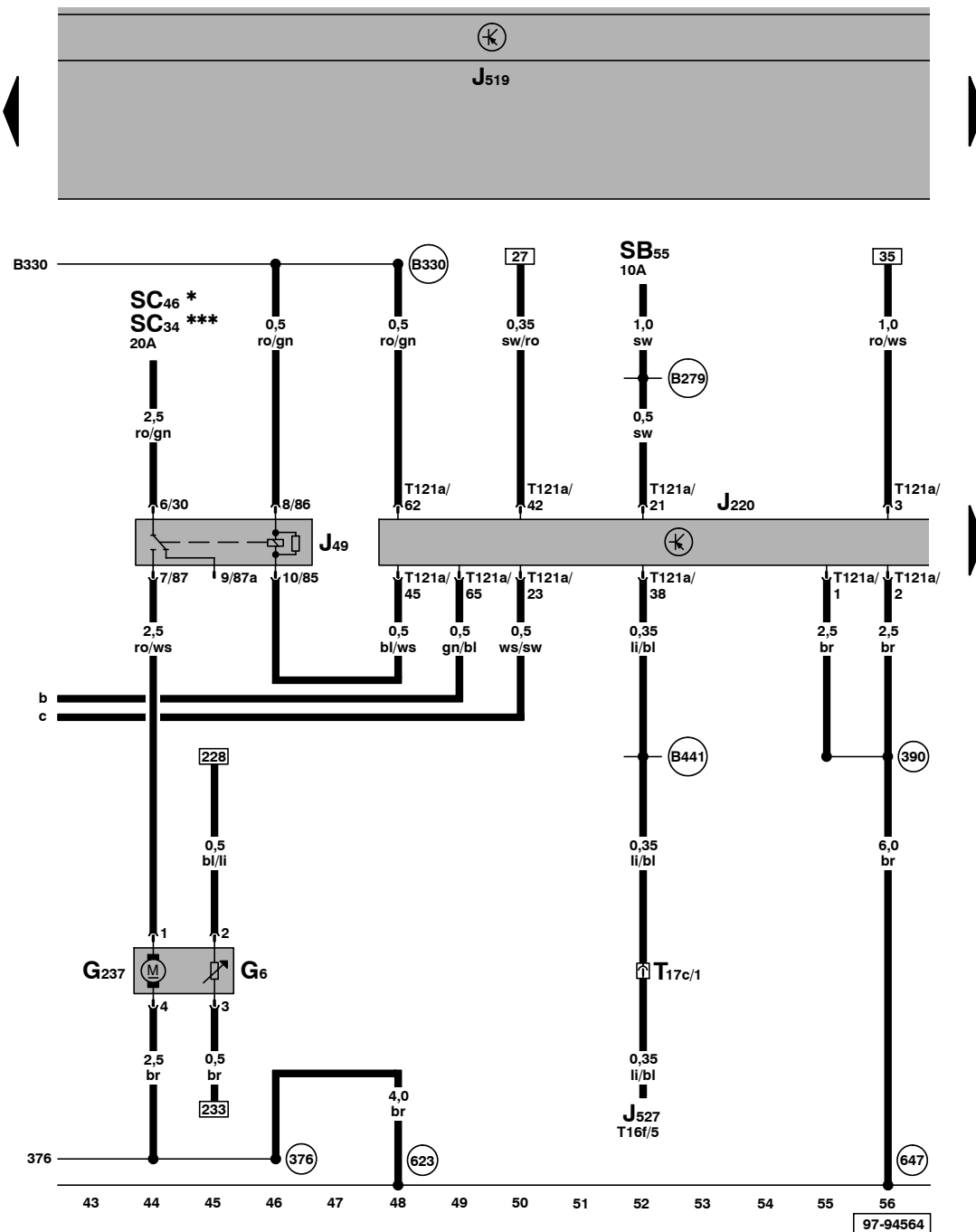


Motronic Engine Control Module (ECM) Power Supply Relay, Fuel Pump (FP) Relay, Fuel Pump (FP), Fuel Level Sensor, fuses

- G23 - Fuel Pump (FP)
- J17 - Fuel Pump (FP) Relay
- J271 - Motronic Engine Control Module (ECM) Power Supply Relay
- J367 - Battery Monitoring Control Module
- J519 - Vehicle Electrical System Control Module
- SC33 - Fuse 33 (on fuse panel C)
- SC35 - Fuse 35 (on fuse panel C)
- SD6 - Fuse 6 (on fuse panel D)
- SD7 - Fuse 7 (on fuse panel D)
- SD8 - Fuse 8 (on fuse panel D)
- SD9 - Fuse 9 (on fuse panel D)
- SD10 - Fuse 10 (on fuse panel D)
- SD12 - Fuse 12 (on fuse panel D)
- SD14 - Fuse 14 (on fuse panel D)

- (376) - Ground Connection 11 (in main wiring harness)
- (B307) - Plus Connection 11 (30) (in main wiring harness)
- (B308) - Plus Connection 12 (30) (in main wiring harness)
- (B330) - Plus Connection 16 (30a) (in main wiring harness)
- (B352) - Plus Connection 3 (87a) (in main wiring harness)
- (B429) - Fuel Pump (FP) Relay Connection (in main wiring harness)

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Motronic Engine Control Module (ECM), Fuel Pump (FP) 2 Relay, Fuel Level Sensor 3, Transfer Fuel Pump (FP)


- G6 - Transfer Fuel Pump (FP)
- G237 - Fuel Level Sensor 3
- J49 - Fuel Pump (FP) 2 Relay
- J220 - Motronic Engine Control Module (ECM)
- J519 - Vehicle Electrical System Control Module
- J527 - Steering Column Electronic Systems Control Module
- SB55 - Fuse 55 (on fuse panel B)
- SC34 - Fuse 34 (on fuse panel C)
- SC46 - Fuse 46 (on fuse panel C)
- T16f - 16-Pin Connector
- T17c - 17-Pin Connector, below instrument panel, left
- T121a - 121-Pin Connector

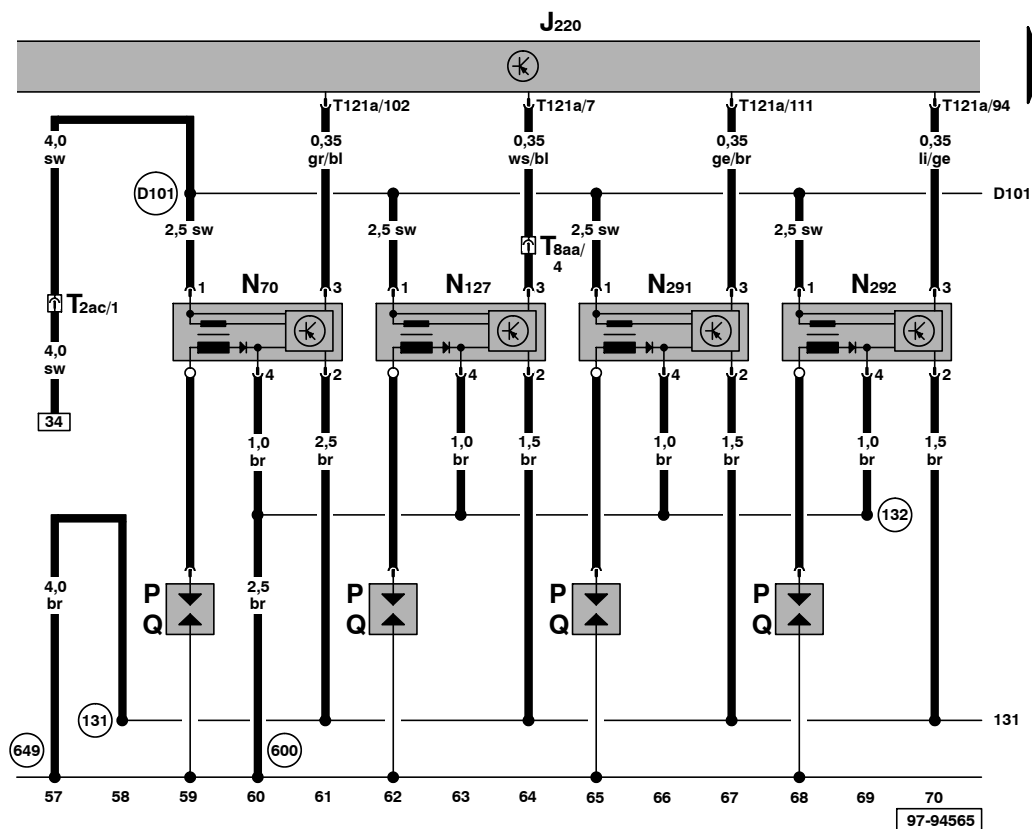
- (376) - Ground Connection 11 (in main wiring harness)
- (390) - Ground Connection 25 (in main wiring harness)
- (623) - Ground Plate Ground Connection 2
- (647) - Ground Connection 3 (on firewall)
- (B279) - Plus Connection 3 (15a) (in main wiring harness)
- (B330) - Plus Connection 16 (30a) (in main wiring harness)
- (B441) - Cruise Control Connection (in main wiring harness)

- * - From November 2003
- ** - Through October 2003

Motronic Engine Control Module (ECM), Ignition Coil 1-4 with Power Output Stage

- J220 - Motronic Engine Control Module (ECM)
 J519 - Vehicle Electrical System Control Module
 N70 - Ignition Coil 1 with Power Output Stage
 N127 - Ignition Coil 2 with Power Output Stage
 N291 - Ignition Coil 3 with Power Output Stage
 N292 - Ignition Coil 4 with Power Output Stage
 P - Spark Plug Connector
 Q - Spark Plug
 T2ac - Double Connector, black, connector station 1/ in basic engine harness
 T8aa - 8-Pin Connector, connector station 3/ in basic engine harness
 T121a- 121-Pin Connector

- 131 - Ground Connection 2 (in engine compartment wiring harness)
 132 - Ground Connection 3 (in engine compartment wiring harness)
 600 - Ground Connection (on cylinder head, right)
 649 - Ground Connection 5 (on firewall)
 D101 - Connection 1 (in engine compartment wiring harness)



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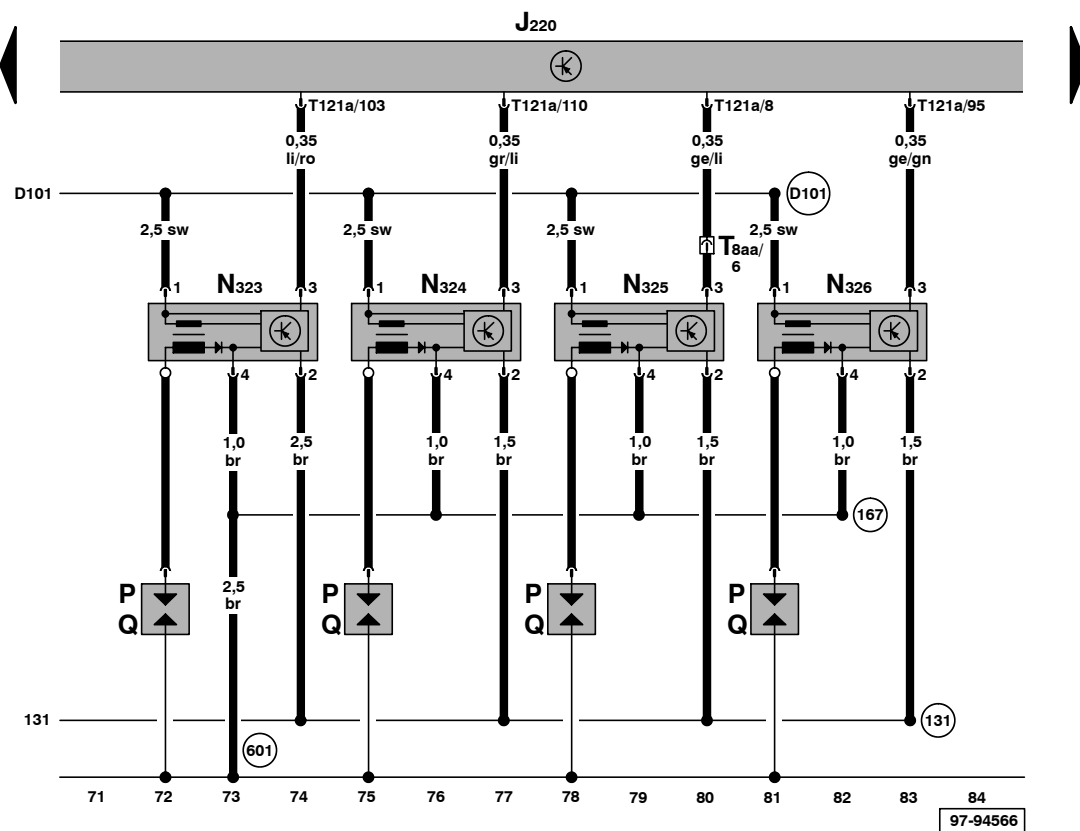
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**Motronic Engine Control Module (ECM), Ignition
Coil 5-8 with Power Output Stage**

J220 - Motronic Engine Control Module (ECM)
 J519 - Vehicle Electrical System Control Module
 N323- Ignition Coil 5 with Power Output Stage
 N324- Ignition Coil 6 with Power Output Stage

N325- Ignition Coil 7 with Power Output Stage
 N326- Ignition Coil 8 with Power Output Stage
 P - Spark Plug Connector
 Q - Spark Plug
 T121a- 121-Pin Connector


- (131) - Ground Connection 2 (in engine compartment wiring harness)
- (167) - Ground Connection 4 (in engine compartment wiring harness)
- (601) - Ground Connection (on cylinder head, left)
- (D101) - Connection 1 (in engine compartment wiring harness)

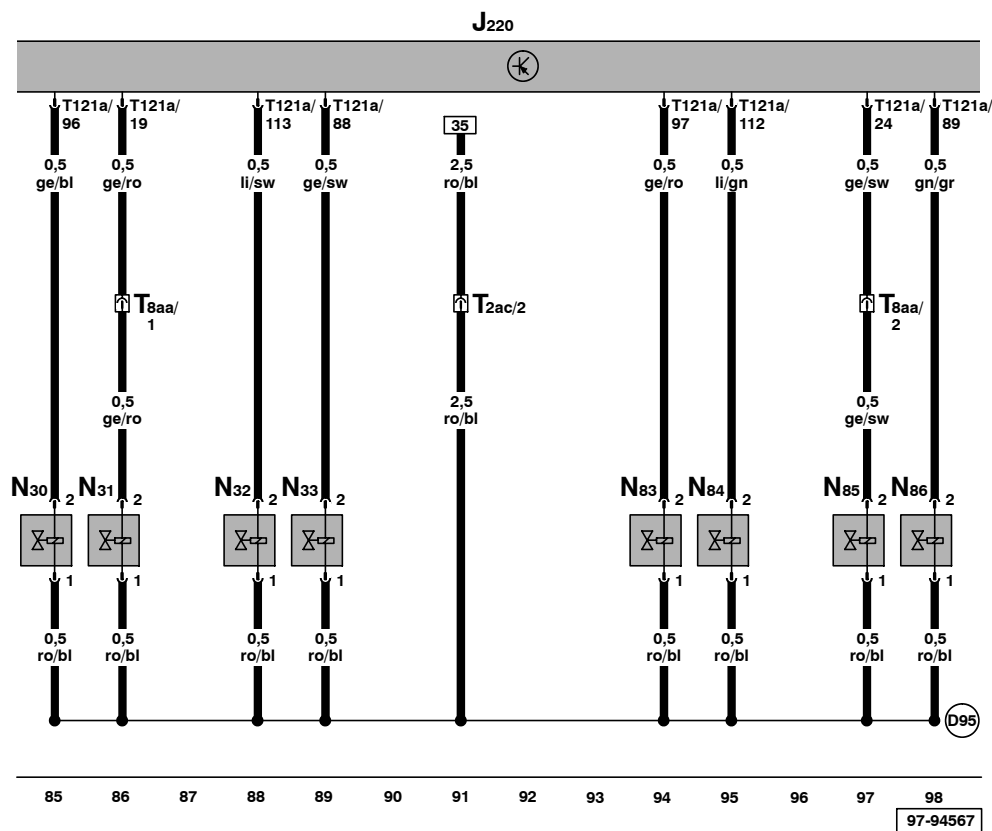


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Motronic Engine Control Module (ECM), Cylinder 1-8 Fuel Injectors

- J220 - Motronic Engine Control Module (ECM)
 J519 - Vehicle Electrical System Control Module
 N30 - Cylinder 1 Fuel Injector
 N31 - Cylinder 2 Fuel Injector
 N32 - Cylinder 3 Fuel Injector
 N33 - Cylinder 4 Fuel Injector
 N83 - Cylinder 5 Fuel Injector
 N84 - Cylinder 6 Fuel Injector
 N85 - Cylinder 7 Fuel Injector
 N86 - Cylinder 8 Fuel Injector
 T2ac - Double Connector, black, connector station 1/ in basic engine harness
 T8aa - 8-Pin Connector, connector station 3/ in basic engine harness
 T121a- 121-Pin Connector

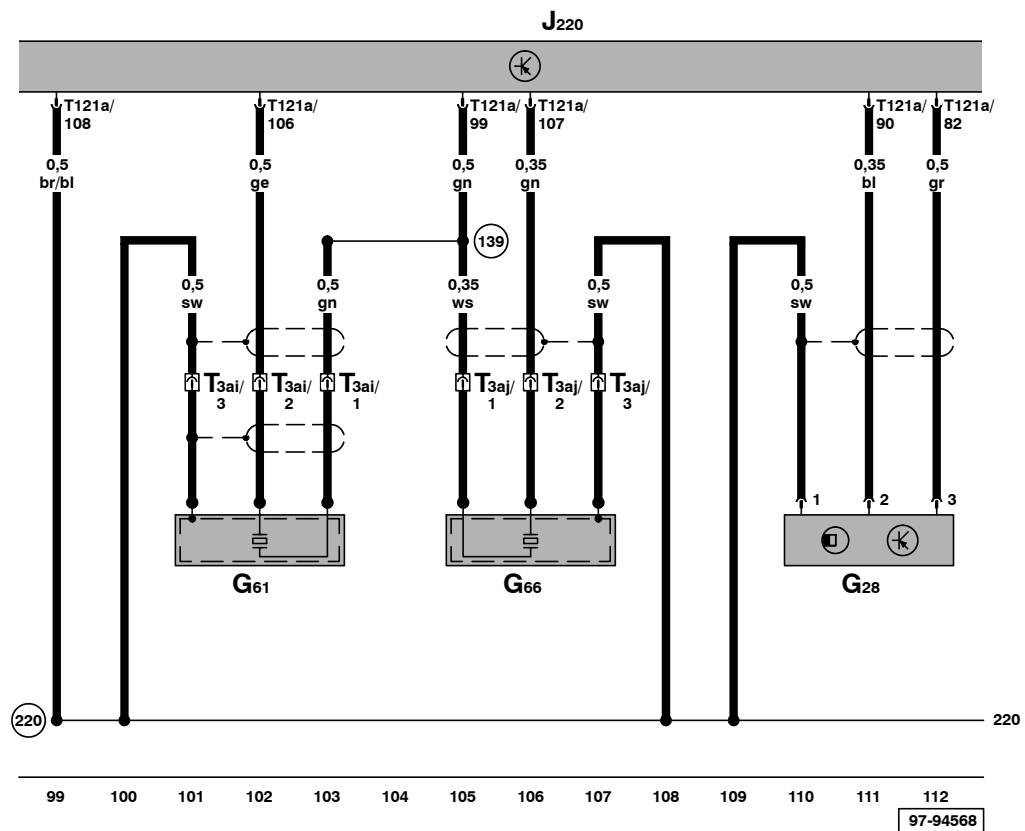
 - Injectors Connection (in engine compartment wiring harness)



Motronic Engine Control Module (ECM), Engine Speed (RPM) Sensor, Knock Sensor (KS) 1, Knock Sensor (KS) 2

- G28 - Engine Speed (RPM) Sensor
 G61 - Knock Sensor (KS) 1
 G66 - Knock Sensor (KS) 2
 J220 - Motronic Engine Control Module (ECM)
 J519 - Vehicle Electrical System Control Module
 T3ai - 3-Pin Connector
 T3aj - 3-Pin Connector
 T121a- 121-Pin Connector

- (139) - Sensor Ground Connection (in Motronic Multiport Fuel Injection (MFI) wiring harness)
 (220) - Sensor Ground Connection (in engine compartment wiring harness)

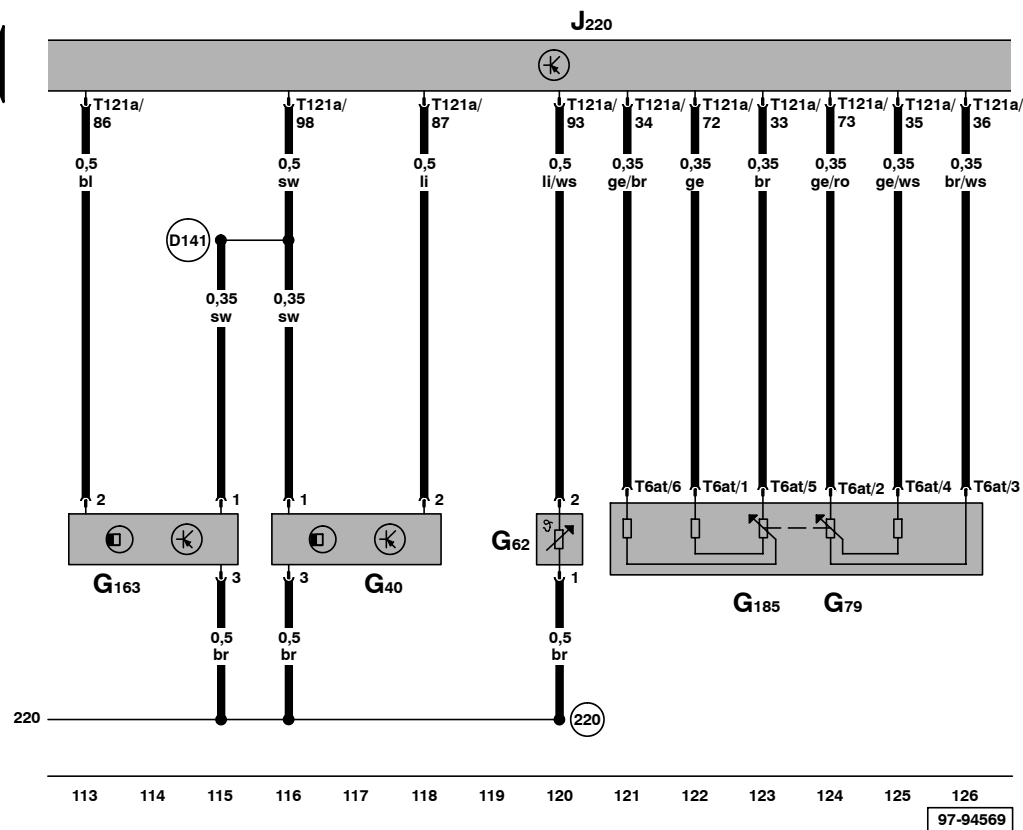


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Motronic Engine Control Module (ECM), Camshaft Position (CMP) Sensor, Throttle Position (TP) Sensor, Engine Coolant Temperature (ECT) Sensor

- G40 - Camshaft Position (CMP) Sensor
- G62 - Engine Coolant Temperature (ECT) Sensor
- G79 - Throttle Position (TP) Sensor
- G163 - Camshaft Position (CMP) Sensor 2
- G185 - Accelerator Pedal Position Sensor 2
- J220 - Motronic Engine Control Module (ECM)
- J519 - Vehicle Electrical System Control Module
- T6at - 6Pin Connector
- T121a- 121-Pin Connector

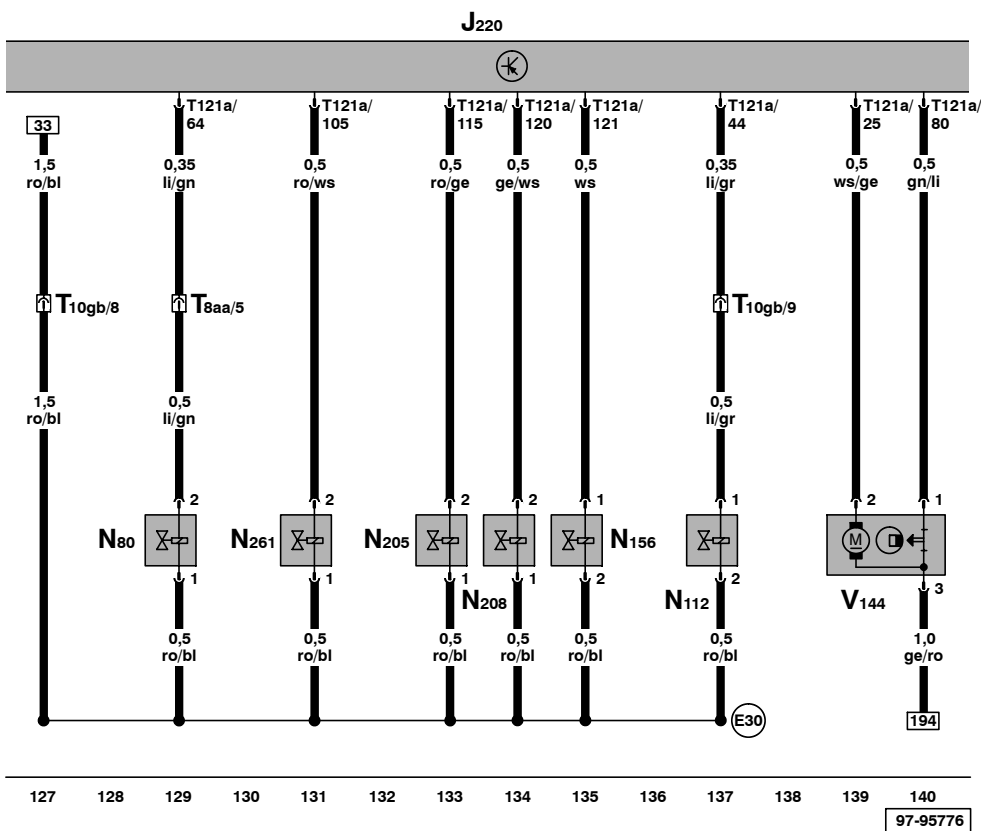
- (220) - Sensor Ground Connection (in engine compartment wiring harness)
- (D141) - Connection (5V) (in engine pre-wiring wiring harness)



Motronic Engine Control Module (ECM), Leak Detection Pump (LDP), Intake Manifold Tuning (IMT) Valve, Secondary Air Injection (AIR) Solenoid Valve, N80, N205, N208, N261

- J220 - Motronic Engine Control Module (ECM)
 J519 - Vehicle Electrical System Control Module
 N80 - Evaporative Emission (EVAP) Canister Purge Regulator Valve
 N112 - Secondary Air Injection (AIR) Solenoid Valve
 N156 - Intake Manifold Tuning (IMT) Valve
 N205 - Camshaft Adjustment Valve 1
 N208 - Camshaft Adjustment Valve 2
 N261 - Intake Manifold Tuning (IMT) Valve 2
 T8aa - 8-Pin Connector, connector station 3/ in basic engine harness
 T10gb- 10-Pin Connector, connector station 2/ transmission
 T121a- 121-Pin Connector
 V144 - Leak Detection Pump (LDP)


(E30) - Connection (87a) (in engine wiring harness)

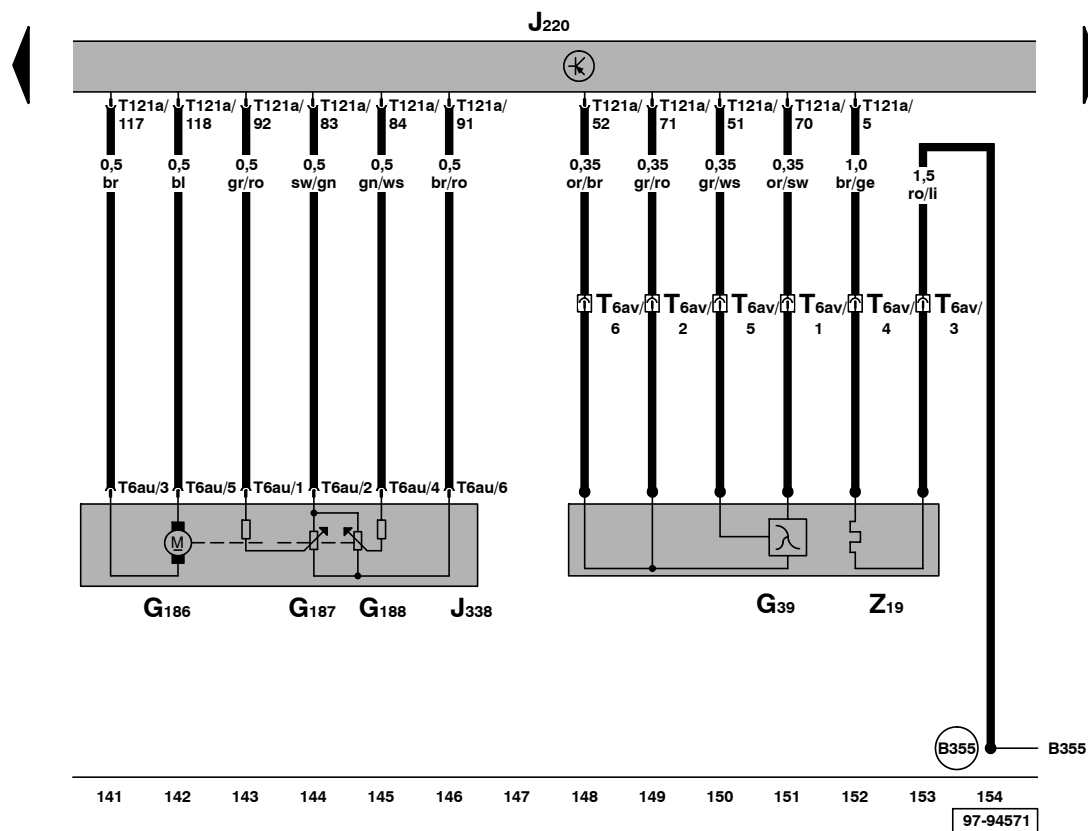


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Engine Control Module (ECM), Throttle Valve Control Module, Heated Oxygen Sensor (HO2S)

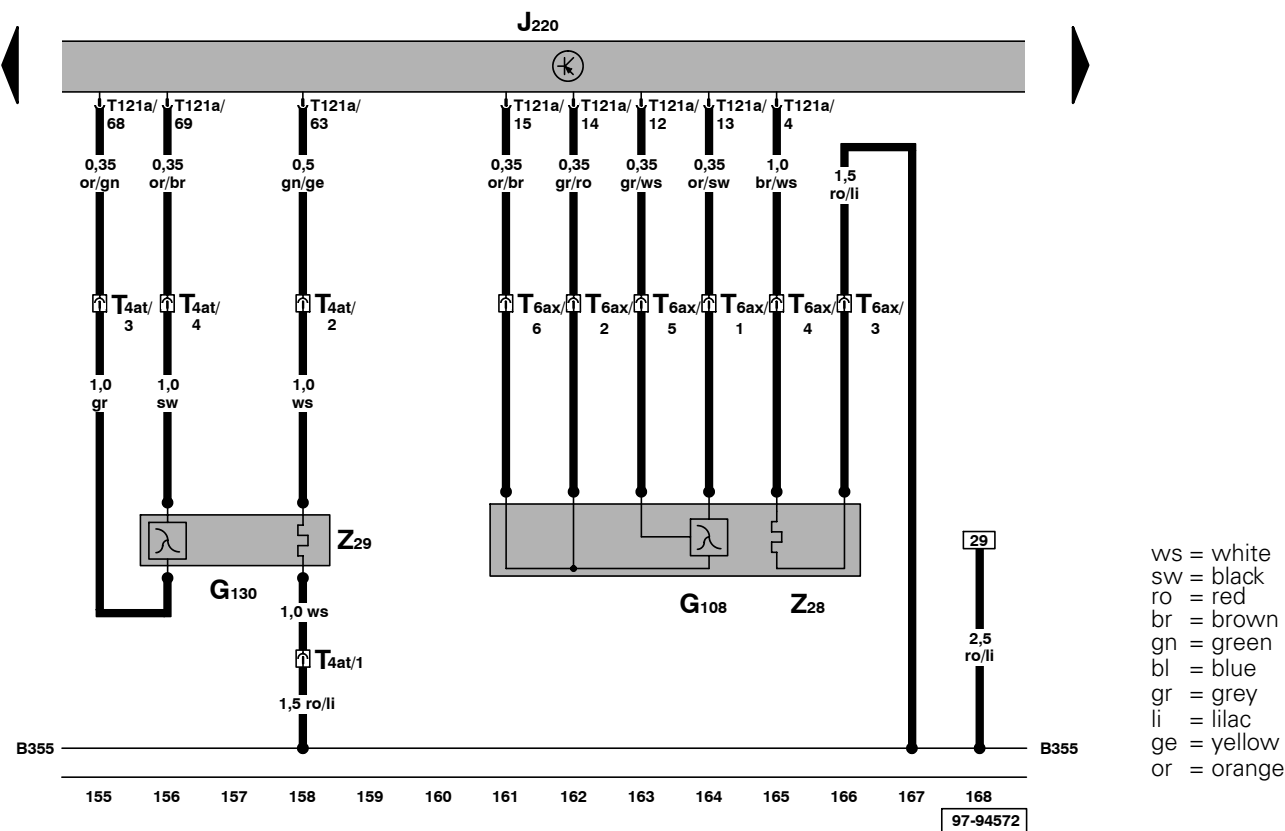
- G39 - Heated Oxygen Sensor (HO2S)
 G186 - Throttle Drive (for Electronic Power Control (EPC))
 G187 - Throttle Drive Angle Sensor 1 (for Electronic Power Control (EPC))
 G188 - Throttle Drive Angle Sensor 2 (for Electronic Power Control (EPC))
 J220 - Motronic Engine Control Module (ECM)
 J338 - Throttle Valve Control Module
 J519 - Vehicle Electrical System Control Module
 T6av - 6-Pin Connector, black, connector station 1/ on front of plenum chamber
 T6au - 6-Pin Connector
 T121a - 121-Pin Connector
 Z19 - Oxygen Sensor (O2S) Heater

 - Plus Connection 6 (87a) (in main wiring harness)



Motronic Engine Control Module (ECM), Oxygen Sensor (O2S) behind Three Way Catalytic Converter (TWC) , Heated Oxygen Sensor (HO2S) 2

- G108 - Heated Oxygen Sensor (HO2S) 2
- G130 - Oxygen Sensor (O2S) Behind Three Way Catalytic Converter (TWC)
- J220 - Motronic Engine Control Module (ECM)
- J519 - Vehicle Electrical System Control Module
- T4at - 4-Pin Connector, black, connector station 3/ on front of plenum chamber
- T6ax - 6-Pin Connector, green, connector station 2/ on front of plenum chamber
- T121a- 121-Pin Connector
- Z28 - Oxygen Sensor (O2S) Heater 2
- Z29 - Oxygen Sensor (O2S) Heater 1 (behind Three Way Catalytic Converter (TWC)

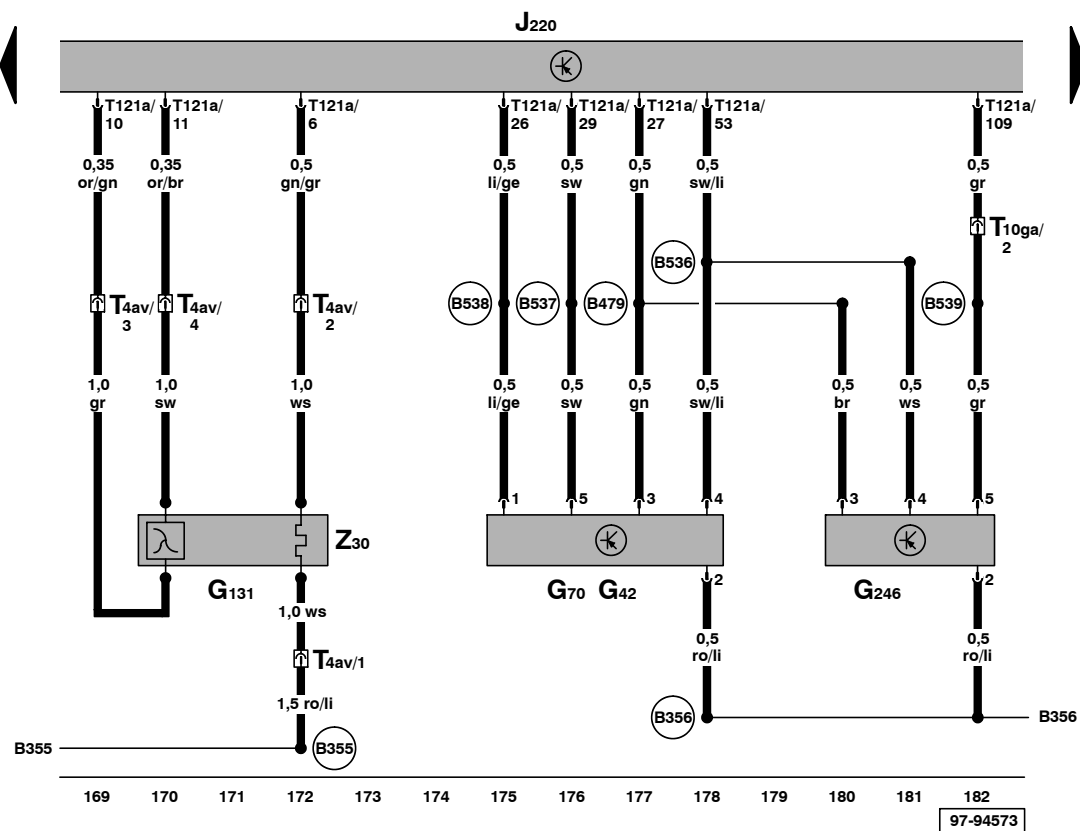


Motronic Engine Control Module (ECM), Intake Air Temperature (IAT) Sensor, Oxygen Sensor (O2S) 2 behind Three Way Catalytic Converter (TWC), Mass Air Flow (MAF) Sensor

- G42 - Intake Air Temperature (IAT) Sensor
- G70 - Mass Air Flow (MAF) Sensor
- G131 - Oxygen Sensor (O2S) 2 behind Three Way Catalytic Converter (TWC)
- G246 - Mass Air Flow (MAF) Sensor 2
- J220 - Motronic Engine Control Module (ECM)
- J519 - Vehicle Electrical System Control Module
- T4av - 4-Pin Connector, green, connector station 4/ on front of plenum chamber
- T10ga- 10-Pin Connector, connector station 1/ transmission
- T121a- 121-Pin Connector
- Z30 - Oxygen Sensor (O2S) Heater 2 (behind Three Way Catalytic Converter (TWC))

- (B355) - Plus Connection 6 (87a) (in main wiring harness)
- (B356) - Plus Connection 7 (87a) (in main wiring harness)
- (B479) - Connection 15 (in main wiring harness)
- (B536) - Connection 27 (in main wiring harness)
- (B537) - Connection 28 (in main wiring harness)
- (B538) - Connection 29 (in main wiring harness)
- (B539) - Connection 30 (in main wiring harness)

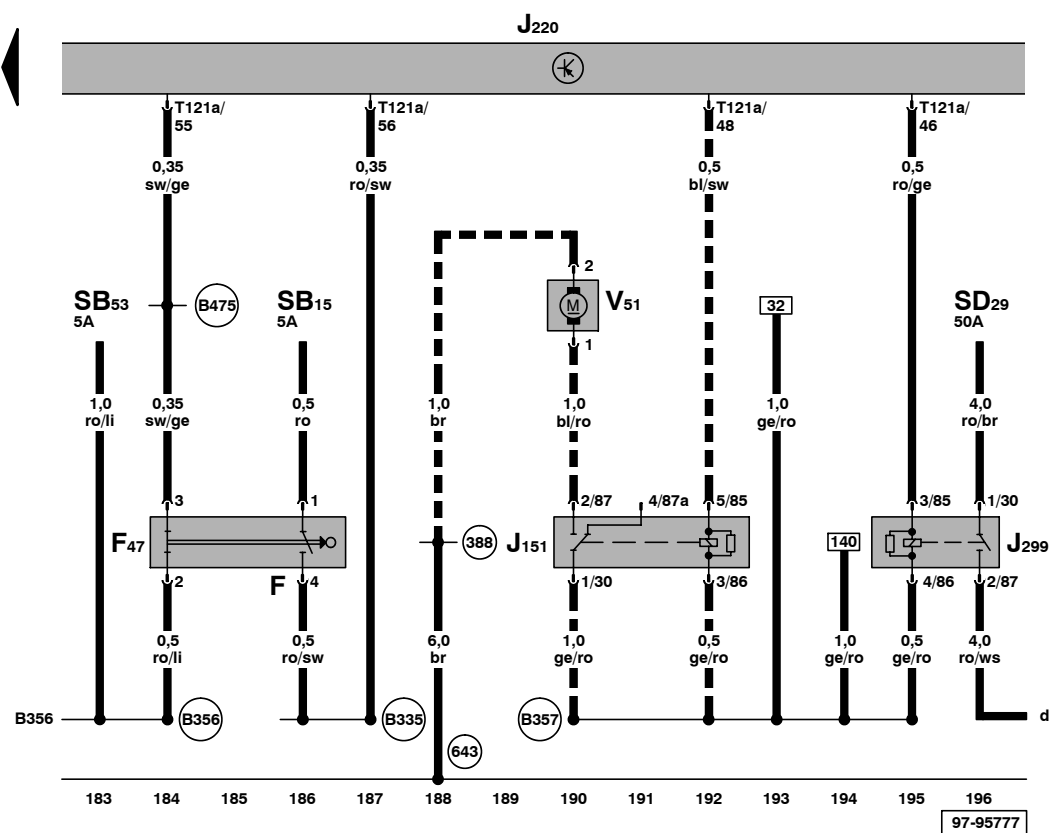
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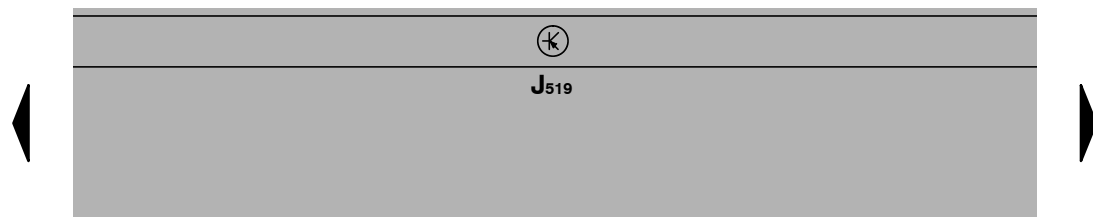


Motronic Engine Control Module (ECM), Brake Light Switch, Brake Pedal Switch, Coolant Circulation Pump Relay, After-Run Coolant Pump, Secondary Air Injection (AIR) Pump Relay

- F - Brake Light Switch
- F47 - Brake Pedal Switch
- J151 - Coolant Circulation Pump Relay
- J220 - Motronic Engine Control Module (ECM)
- J299 - Secondary Air Injection (AIR) Pump Relay
- J519 - Vehicle Electrical System Control Module
- SB15- Fuse 15 (on fuse panel B)
- SB53- Fuse 53 (on fuse panel B)
- SD29- Fuse 29 (on fuse panel D)
- T121a- 121-Pin Connector
- V51 - After-Run Coolant Pump

- 388 - Ground Connection 23 (in main wiring harness)
- 643 - Secondary Air Pump Ground Connection 1
- B335 - Connection 1 (54) (in main wiring harness)
- B356 - Plus Connection 7 (87a) (in main wiring harness)
- B357 - Plus Connection 8 (87a) (in main wiring harness)
- B475 - Connection 11 (in main wiring harness)
- Through April 2005



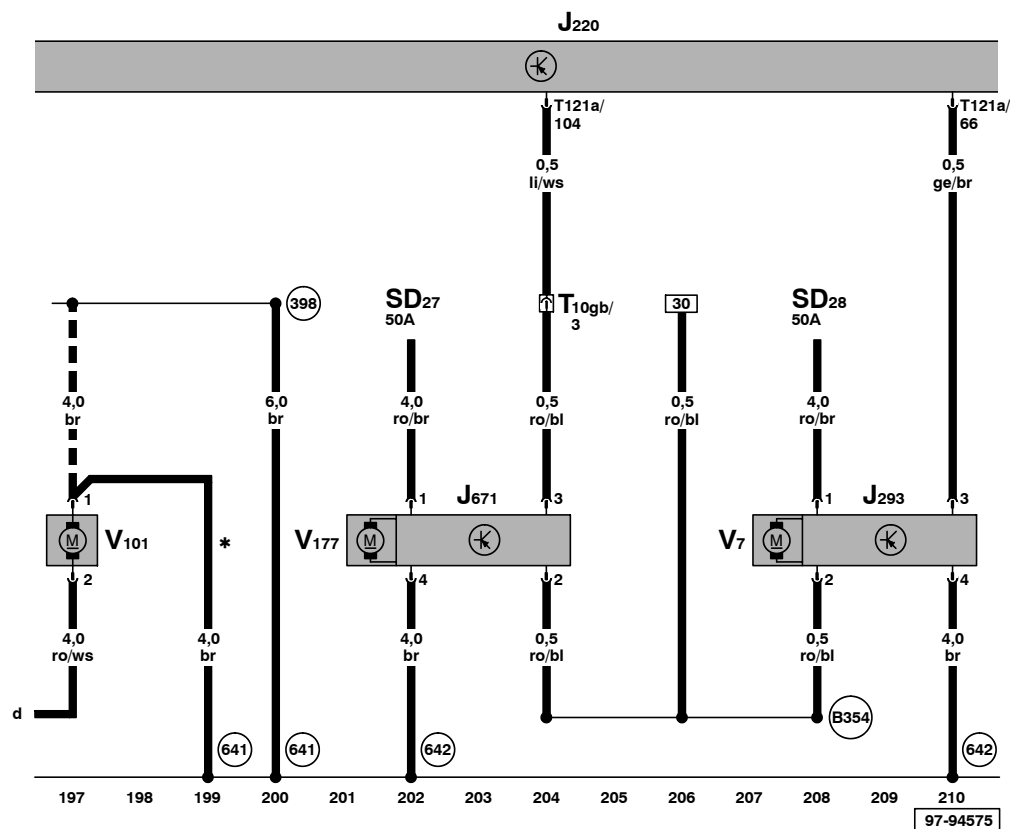


Motronic Engine Control Module (ECM), Coolant Fan Control (FC) Control Module, Coolant Fan Control (FC) Control Module 2, Coolant Fan, Secondary Air Injection (AIR) Pump Motor

J220 -	Motronic Engine Control Module (ECM)
J293 -	Coolant Fan Control (FC) Control Module
J519 -	Vehicle Electrical System Control Module
J671 -	Coolant Fan Control (FC) Control Module 2
SD27-	Fuse 27 (on fuse panel D)
SD28-	Fuse 28 (on fuse panel D)
T10gb-	10-Pin Connector, connector station 2/ transmission
T121a-	121-Pin Connector
V7 -	Coolant Fan
V101 -	Secondary Air Injection (AIR) Pump Motor
V177 -	Coolant Fan 2

- 398 - Ground Connection 33 (in main wiring harness)
- 641 - Secondary Air Pump Ground Connection 2
- 642 - Ground Connection (on electronic fan control)
- B354 - Plus Connection 5 (87a) (in main wiring harness)

* - From May 2005
 --- Through April 2005



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Motronic Engine Control Module (ECM), Instrument Cluster Control Module, Engine Coolant Level (ECL) Sensor, Kick Down Switch, Engine Coolant Temperature (ECT) Sensor (on Radiator), K2

- F8 - Kick Down Switch
- G32 - Engine Coolant Level (ECL) Sensor
- G83 - Engine Coolant Temperature (ECT) Sensor (on Radiator)
- J220 - Motronic Engine Control Module (ECM)
- J285 - Instrument Cluster Control Module
- J519 - Vehicle Electrical System Control Module
- K2 - Generator (GEN) Warning Lamp
- T16 - 16-Pin Connector, Data Link Connector (DLC), below instrument panel, left
- T17e - 17-Pin Connector, below instrument panel, left
- T17g - 17-Pin Connector, below instrument panel, left
- T32 - 32-Pin Connector, blue
- T32a - 32-Pin Connector, green
- T121a - 121-Pin Connector

- (371) - Ground Connection 6 (in main wiring harness)
- (372) - Ground Connection 7 (in main wiring harness)
- (399) - Ground Connection 34 (in main wiring harness)
- (639) - Ground Connection (on left A-pillar)
- (B383) - Powertrain CAN-Bus High Connection 1 (in main wiring harness)
- (B385) - Powertrain CAN-Bus High Connection 3 (in main wiring harness)
- (B386) - Powertrain CAN-Bus High Connection 4 (in main wiring harness)
- (B390) - Powertrain CAN-Bus Low Connection 1 (in main wiring harness)
- (B392) - Powertrain CAN-Bus Low Connection 3 (in main wiring harness)
- (B393) - Powertrain CAN-Bus Low Connection 4 (in main wiring harness)
- (B444) - OBD Connection 1 (in main wiring harness)

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Instrument Cluster Control Module, Oil Level Thermal Sensor, Fuel Level Sensor 2 and 4, Oil Pressure Switch, Oil Pressure Warning Lamp, Low Fuel Level Warning Lamp

- F1 - Oil Pressure Switch
- G169 - Fuel Level Sensor 2
- G266 - Oil Level Thermal Sensor
- G393 - Fuel Level Sensor 4
- J285 - Instrument Cluster Control Module
- J519 - Vehicle Electrical System Control Module
- K3 - Oil Pressure Warning Lamp
- K28 - Engine Coolant Level/Temperature (ECL/ECT) Warning Lamp
- K38 - Oil Level Indicator Lamp
- K105 - Low Fuel Level Warning Lamp
- SB56 - Fuse 56 (on fuse panel B)
- T8aa - 8-Pin Connector, connector station 3/ in basic engine harness
- T14b - 14-Pin Connector, below instrument panel, left
- T17e - 17-Pin Connector, below instrument panel, left
- T17g - 17-Pin Connector, below instrument panel, left
- T32 - 32-Pin Connector, blue
- T32a - 32-Pin Connector, green

- (85) - Ground Connection 1 (in engine compartment wiring harness)
- (393) - Ground Connection 28 (in main wiring harness)
- (399) - Ground Connection 34 (in main wiring harness)
- (648) - Ground Connection 4 (on firewall)

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