

2.8L - Engine - Motronic Multiport Fuel Injection (MFI) / 142kW, code ATQ,

from June 2001

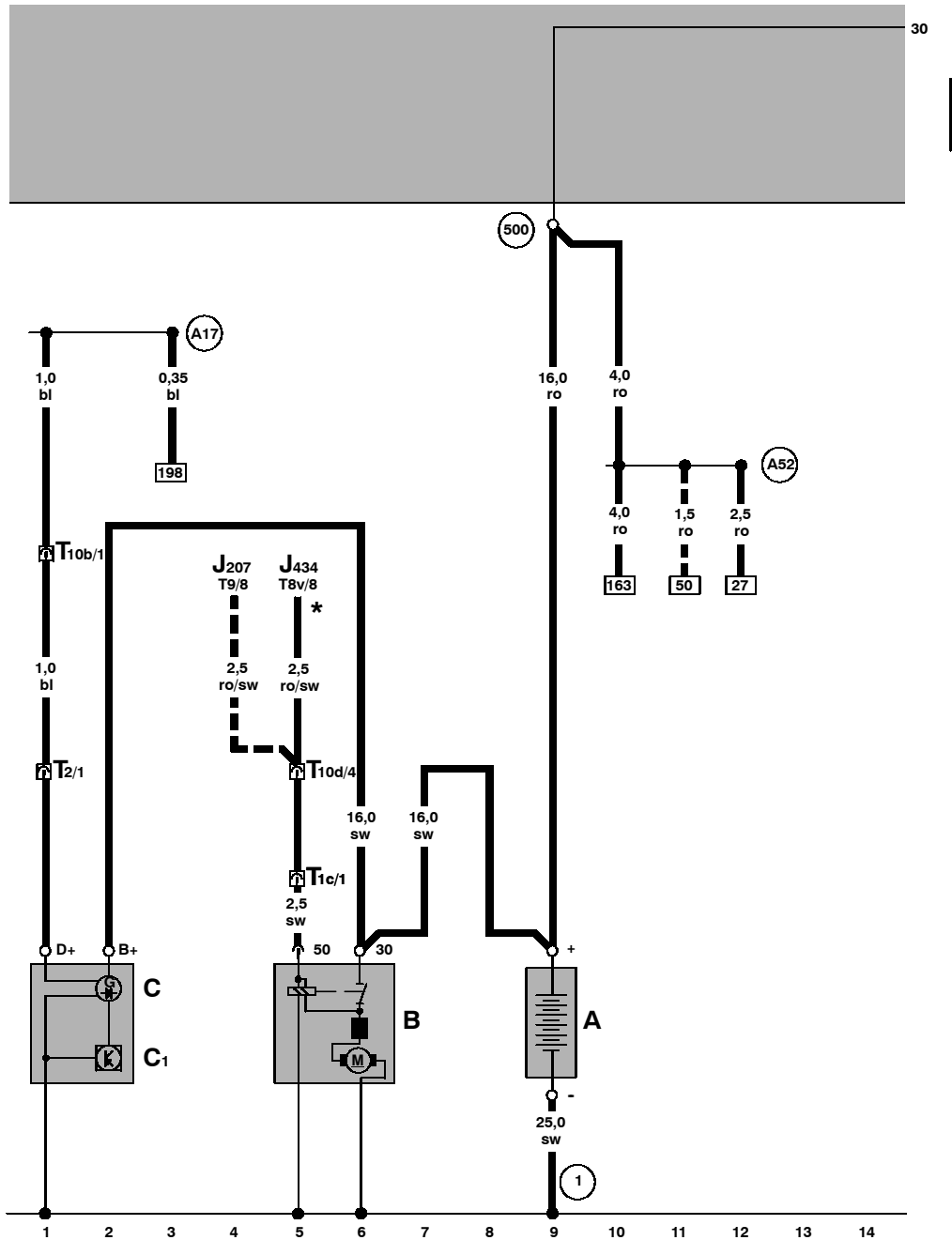
Notes:

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*



Battery, Starter, Generator (GEN), Voltage Regulator (VR)

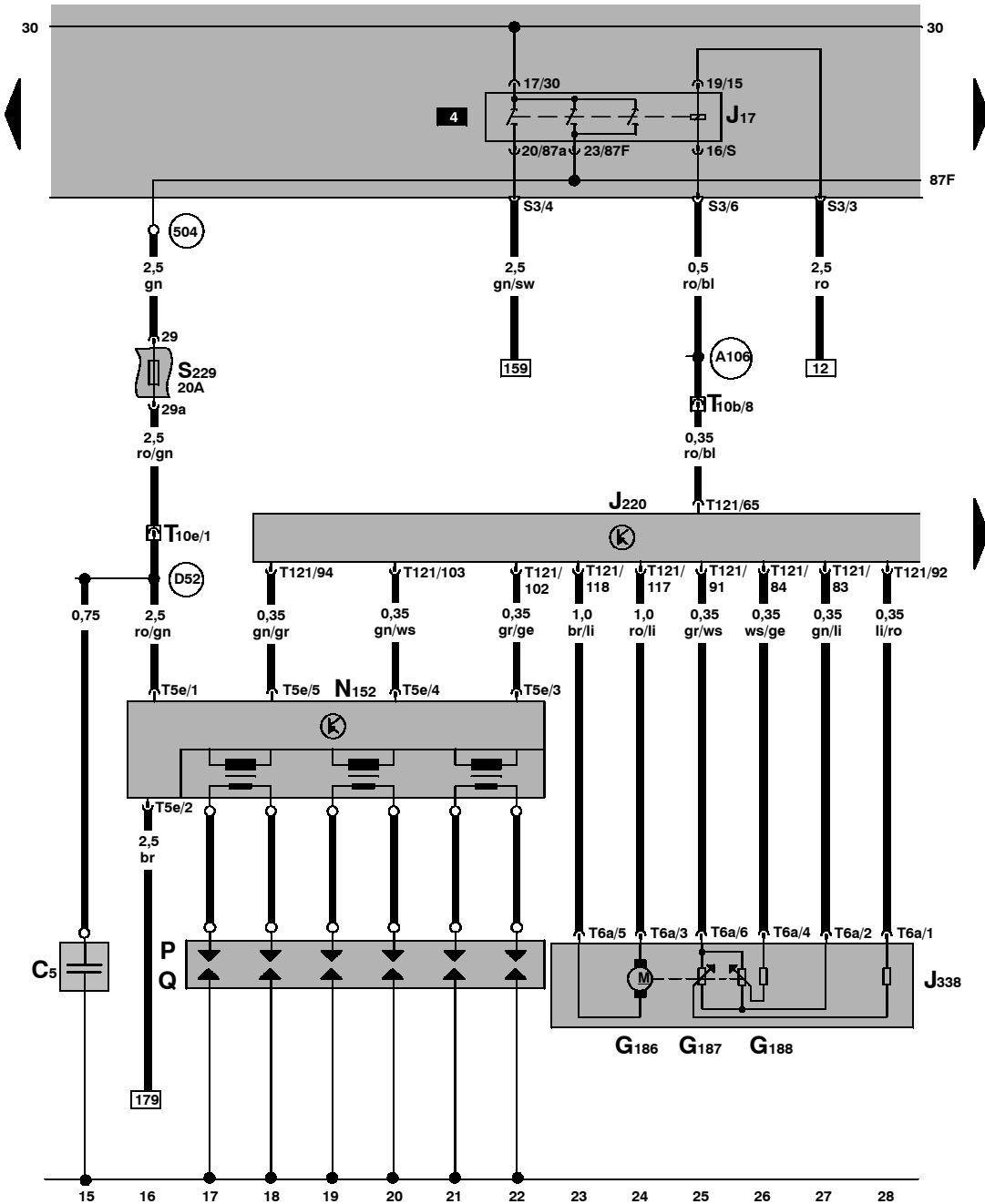
- A - Battery
- B - Starter
- C - Generator (GEN)
- C1 - Voltage Regulator (VR)
- J207 - Starting Interlock Relay
- J434 - Locking relay for starter (clutch pedal switch)
- T1c - Single Connector, black
- T2 - Double Connector, black
- T8v - 8-Pin Connector, on Locking relay for starter
- T9 - 9-Pin Connector, on Starting Interlock Relay
- T10b - 10-Pin Connector, black, on protective housing for control module, in engine compartment, left
- T10d - 10-Pin Connector, brown, on protective housing for control module, in engine compartment, left

- ① - Ground strap, battery to body
- ⑤00 - Threaded connection -1- (30) on the relay plate
- ①7 - wire connection (61), in instrument panel wiring harness
- ①52 - Plus Connection 2 (30) (in instrument panel wiring harness)

- * - manual transmission only
- - - - automatic transmission only

ws = white
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 gn = green
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 li = lilac
 ge = yellow
 or = orange

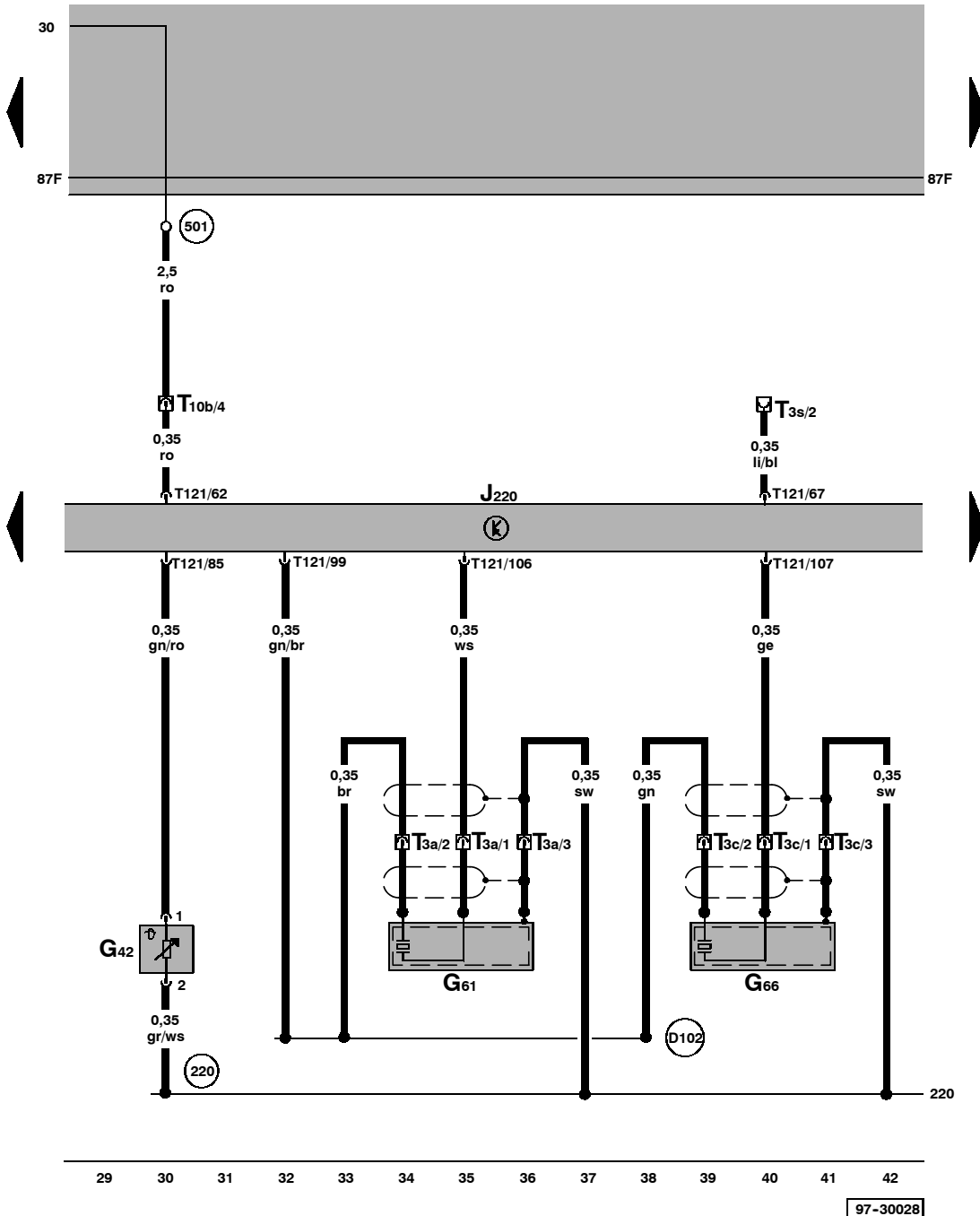
Motronic Engine Control Module (ECM), Throttle Valve Control Module, Ignition Coil, Throttle drive, Spark Plug Connectors, Suppressor



- C5 - Suppressor (Terminal 15)
 - G186 - Throttle drive (power accelerator actuation)
 - G187 - Angle sensor -1- for throttle drive (power accelerator actuation)
 - G188 - Angle sensor -2- for throttle drive (power accelerator actuation)
 - J17 - Fuel Pump (FP) Relay
 - J220 - Motronic Engine Control Module (ECM)
 - J338 - Throttle Valve Control Module
 - N152 - Ignition Coil
 - P - Spark Plug Connectors
 - Q - Spark Plugs
 - S229 - Fuse in fuse holder
 - T5e - 5-Pin Connector, black, on Ignition Coil
 - T6a - 6-Pin Connector, black, on Throttle Valve Control Module
 - T10b - 10-Pin Connector, black, on protective housing for control module, in engine compartment, left
 - T10e - 10-Pin Connector, orange, on protective housing for control module, in engine compartment, left
 - T121 - Connector, 121 point, on Motronic Engine Control Module (ECM)
- (504) - Threaded connection -1- (87) on the relay plate
 - (A106) - Connection -2- (86s), in instrument panel wiring harness
 - (D52) - plus connection (15a), in engine compartment wiring harness

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Motronic Engine Control Module (ECM), Intake Air Temperature (IAT) Sensor, Knock Sensor



- (220) - Ground connection (sensor ground), in engine compartment wiring harness
- (501) - Threaded connection -2- (30) on the relay plate
- (D102) - Wire connection -2-, in engine compartment wiring harness

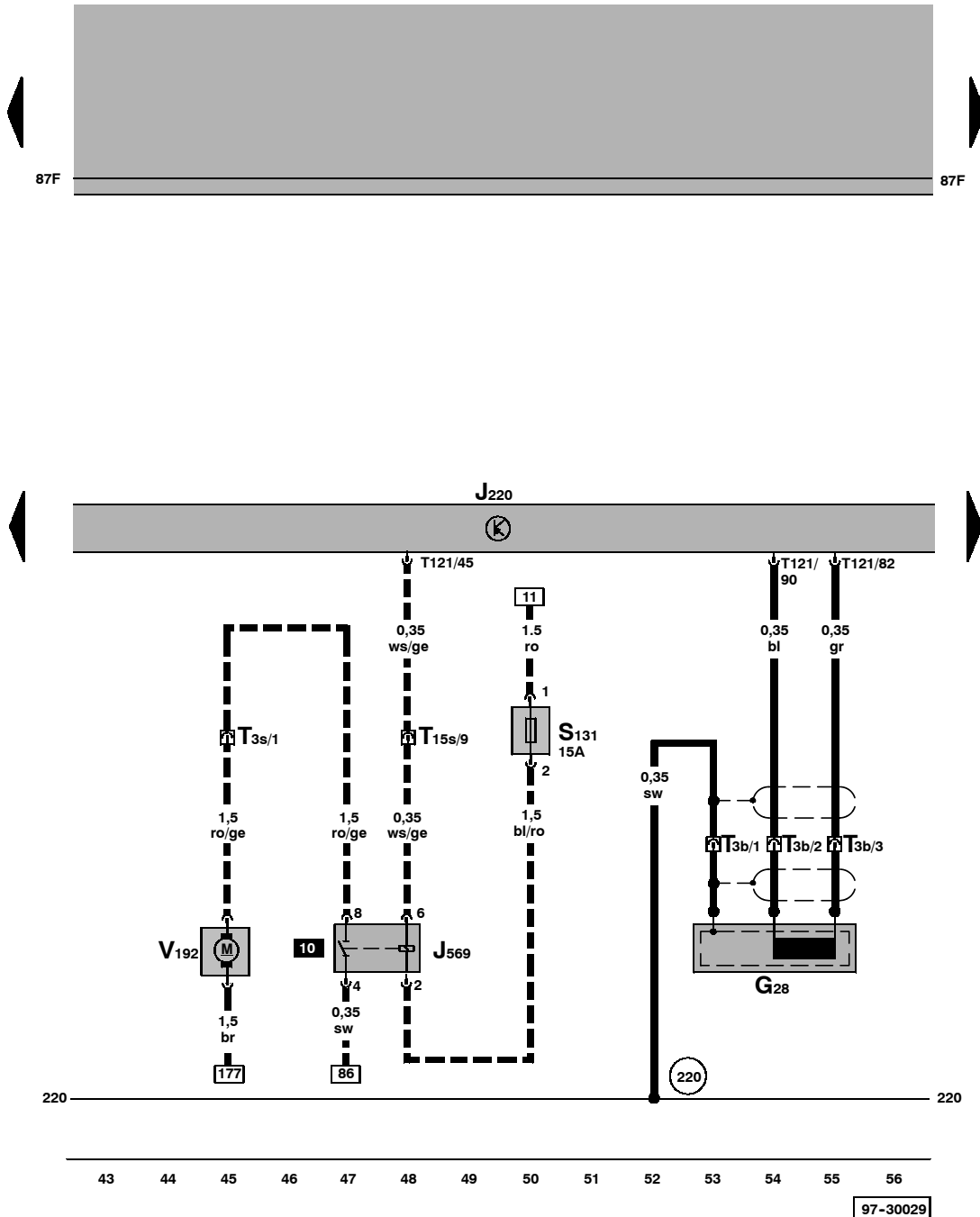
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Motronic Engine Control Module (ECM), Engine Speed (RPM) Sensor, Brake Booster Relay, Brake System Vacuum Pump

- G28 - Engine Speed (RPM) Sensor
- J220 - Motronic Engine Control Module (ECM)
- J569 - Brake Booster Relay
- S131 - Safety fuse 1
- T3b - 3-Pin Connector, grey, on firewall, left
- T3s - 3-Pin Connector, red, on protective housing for control module, in engine compartment, left
- T15s - 15-Pin Connector, red, on protective housing for control module, in engine compartment, left
- T121 - Connector, 121 point, on Motronic Engine Control Module (ECM)
- V192 - Brake System Vacuum Pump

(220) - Ground connection (sensor ground), in engine compartment wiring harness

--- - automatic transmission only



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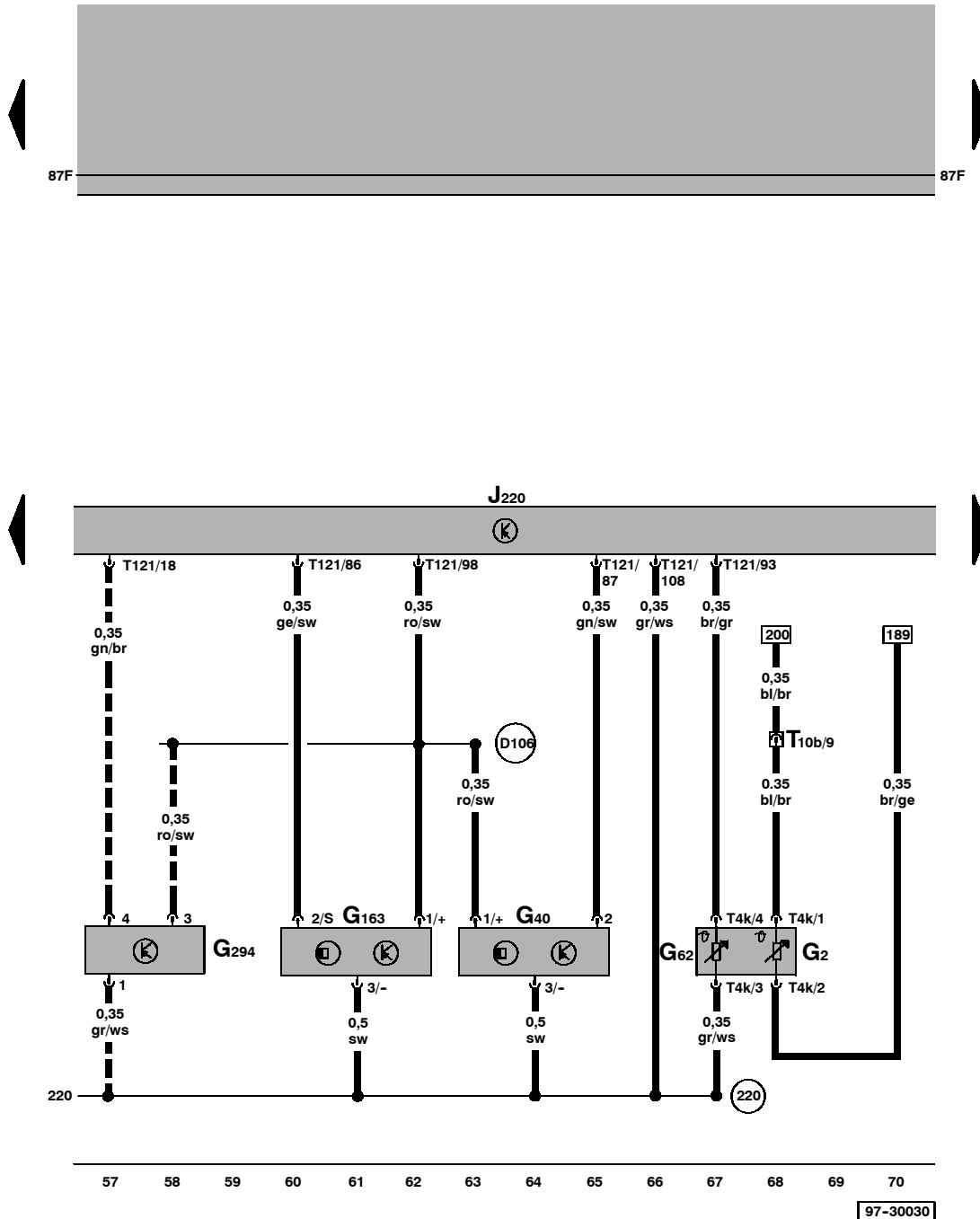
Motronic Engine Control Module (ECM), Brake Booster Pressure Sensor, Camshaft Position (CMP) Sensor, Engine Coolant Temperature (ECT) Sensor

- G2 - Engine Coolant Temperature (ECT) Sensor
- G40 - Camshaft Position (CMP) Sensor
- G62 - Engine Coolant Temperature (ECT) Sensor
- G163 - Camshaft Position (CMP) Sensor 2
- G294 - Brake Booster Pressure Sensor
- J220 - Motronic Engine Control Module (ECM)
- T4k - 4-Pin Connector, black, on Engine Coolant Temperature (ECT) Sensor
- T10b - 10-Pin Connector, black, on protective housing for control module, in engine compartment, left
- T121 - Connector, 121 point, on Motronic Engine Control Module (ECM)

- (220) - Ground connection (sensor ground), in engine compartment wiring harness
- (D106) - wire connection -4-, in engine compartment wiring harness

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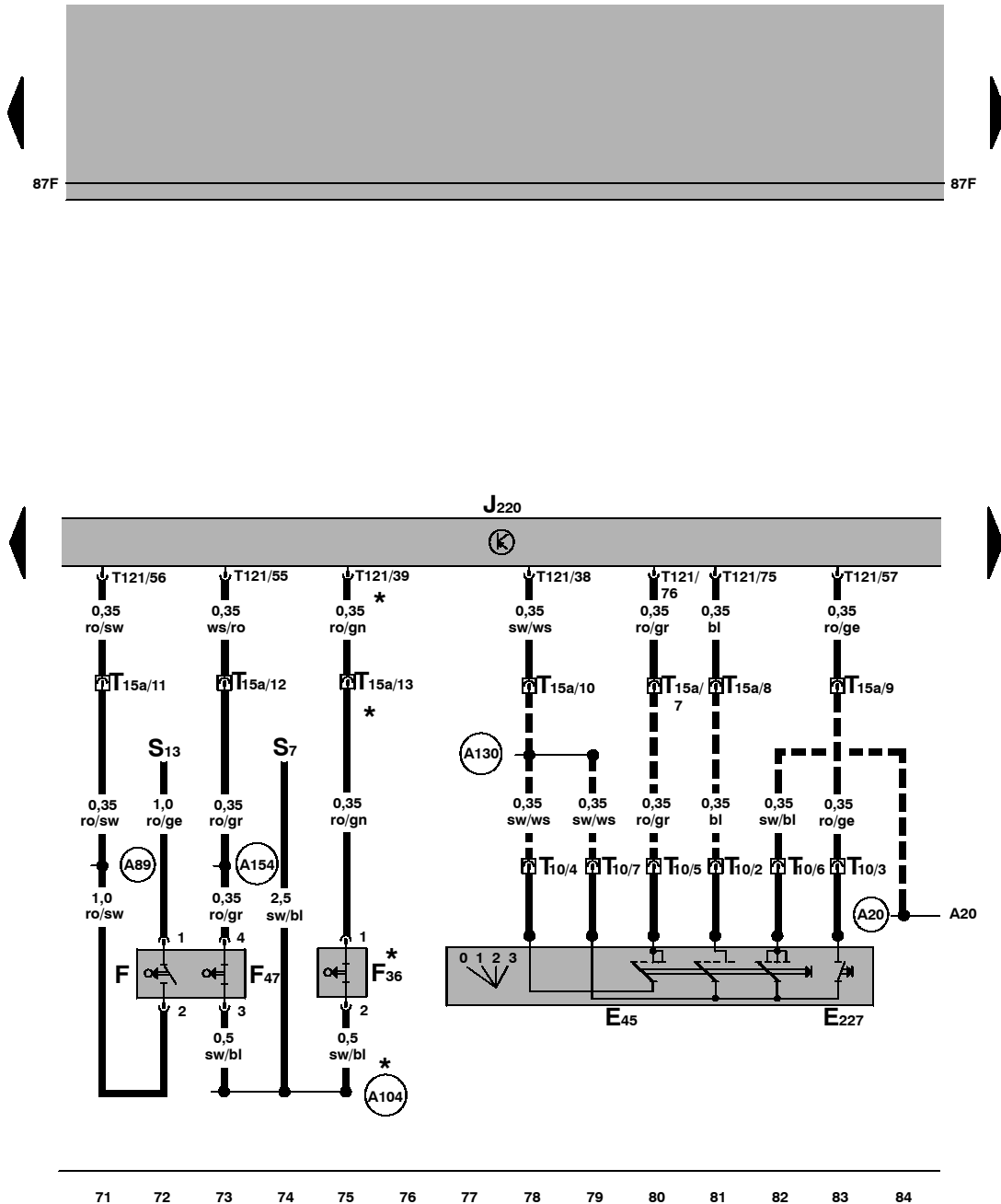
Motronic Engine Control Module (ECM), Button for cruise control, Cruise Control Switch, Brake Light Switch, Clutch Pedal Switch, Brake Pedal Switch

- E45 - Cruise Control Switch
Position 0=OFF locked
Position 1=OFF pushed
Position 2=ON
Position 3=RES
- E227 - Button for cruise control (set)
- F - Brake Light Switch
- F36 - Clutch Pedal Switch
- F47 - Brake Pedal Switch
- J220 - Motronic Engine Control Module (ECM)
- S7 - Fuse
- S13 - Fuse
- T10 - 10-Pin Connector, black
- T15a - 15-Pin Connector, white, on protective housing for control module, in engine compartment, left
- T121 - Connector, 121 point, on Motronic Engine Control Module (ECM)

- (A20) - wire connection (15a), in instrument panel wiring harness
- (A89) - Connection 2 (54) (in instrument panel wiring harness)
- (A104) - Plus connection -2- (15), in instrument panel wiring harness
- (A130) - Connection for Cruise Control (instrument panel wiring harness)
- (A154) - Brake Pedal Switch Connection (in instrument panel wiring harness)

- - - - cruise control only
- * - manual transmission only

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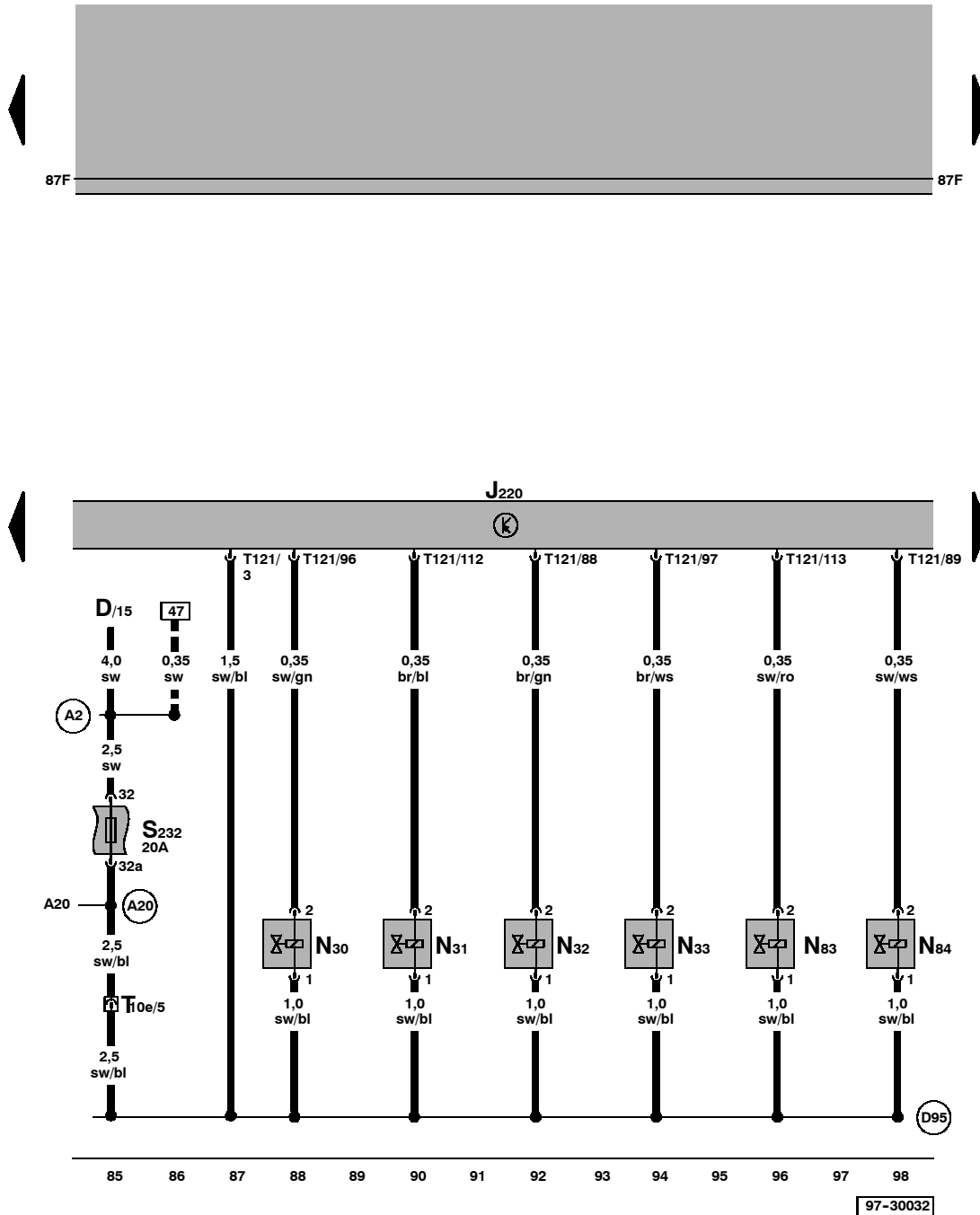
Motronic Engine Control Module (ECM), Cylinder Fuel injectors

- D - Ignition/Starter Switch
- J220 - Motronic Engine Control Module (ECM)
- 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
- S232 - Fuse in fuse holder
- T10e - 10-Pin Connector, orange, on protective housing for control module, in engine compartment, left
- T121 - Connector, 121 point, on Motronic Engine Control Module (ECM)

- (A2) - plus connection (15), in instrument panel wiring harness
- (A20) - wire connection (15a), in instrument panel wiring harness
- (D95) - wire connection (injectors), in engine compartment wiring harness

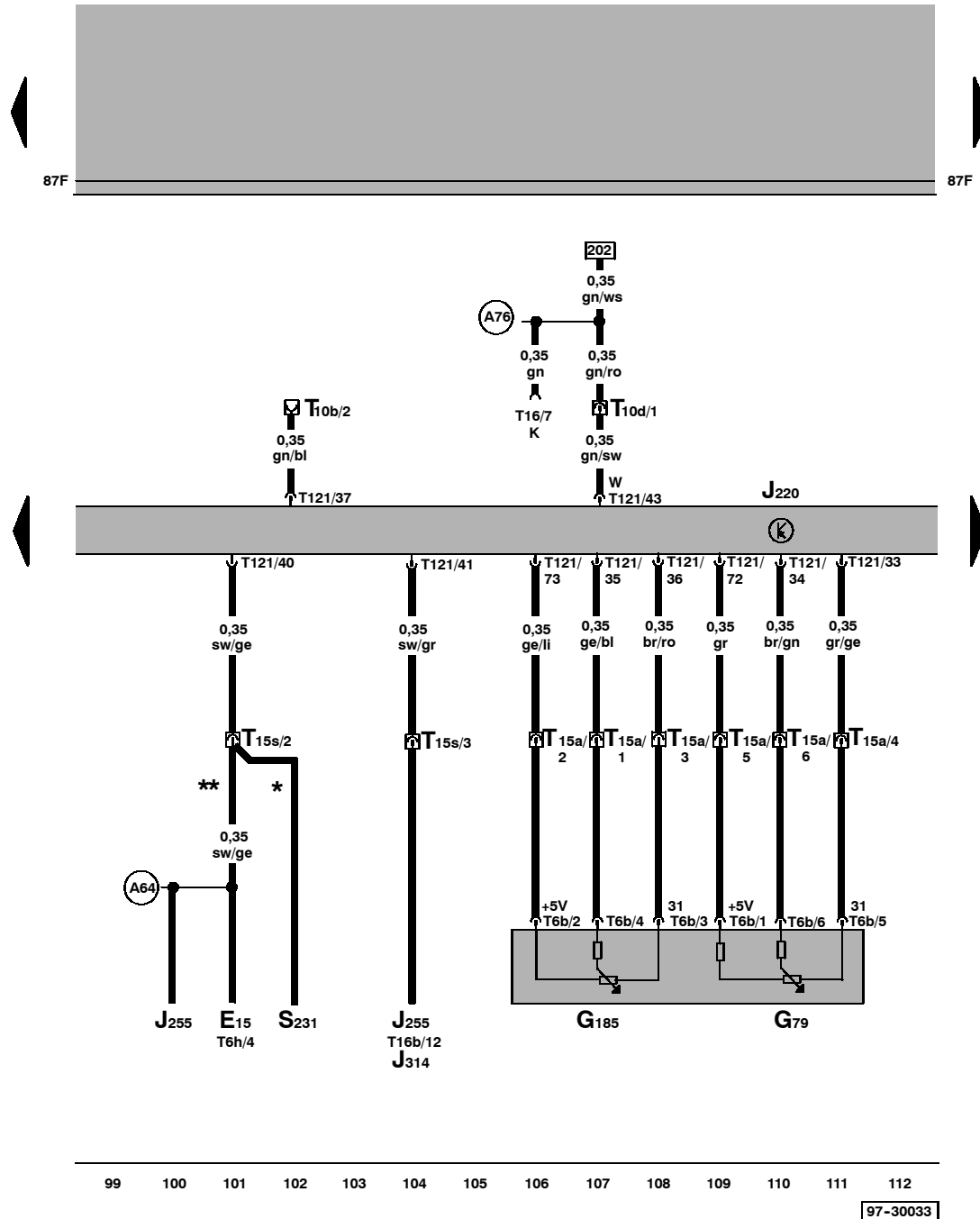
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97-30032

Motronic Engine Control Module (ECM), Throttle Position (TP) Sensor, Sender -2- for accelerator pedal position, Data Link Connector (DLC)



- E15 - Rear window defogger switch
- G79 - Throttle Position (TP) Sensor
- G185 - Sender -2- for accelerator pedal position
- J220 - Motronic Engine Control Module (ECM)
- J255 - Climatronic Control Module
- J314 - A/C Cut-Off Control Module
- S231 - Fuse in fuse holder
- T6b - 6-Pin Connector, on Throttle Position Sensor
- T6h - 6-Pin Connector, black, on Rear window defogger switch
- T10b - 10-Pin Connector, black, on protective housing for control module, in engine compartment, left
- T10d - 10-Pin Connector, brown, on protective housing for control module, in engine compartment, left
- T15a - 15-Pin Connector, white, on protective housing for control module, in engine compartment, left
- T15s - 15-Pin Connector, red, on protective housing for control module, in engine compartment, left
- T16 - 16-Pin Connector, black, Data Link Connector (DLC), below instrument panel, left
- T16b - 16-Pin Connector, brown
- T121 - Connector, 121 point, on Motronic Engine Control Module (ECM)

- (A64) - Connection (30, idle boost), in instrument panel wiring harness
- (A76) - Connection (K-diagnosis wire) in instrument panel wiring harness

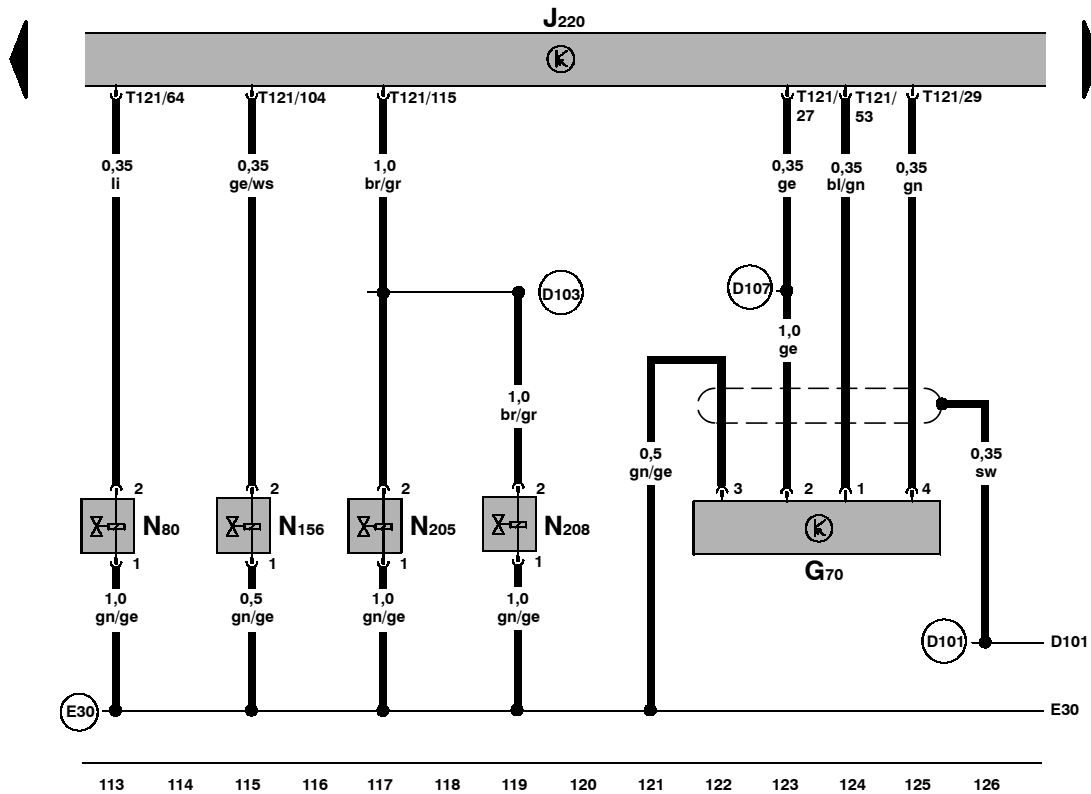
- * - front wheel drive only
- ** - 4-Motion only

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Motronic Engine Control Module (ECM), Valve for camshaft adjustment, Evaporative Emission (EVAP) Canister Purge Regulator Valve, Mass Air Flow (MAF) Sensor

- G70 - Mass Air Flow (MAF) Sensor
- J220 - Motronic Engine Control Module (ECM)
- N80 - Evaporative Emission (EVAP) Canister Purge Regulator Valve
- N156 - Intake Manifold Change-Over Valve
- N205 - Valve -1- for camshaft adjustment
- N208 - Valve -2- for camshaft adjustment
- T121 - Connector, 121 point, on Motronic Engine Control Module (ECM)

- (D101) - Wire connection -1-, in engine compartment wiring harness
- (D103) - wire connection -3-, in engine compartment wiring harness
- (D107) - wire connection -5-, in engine compartment wiring harness
- (E30) - Connection (87a), in wiring harness engine

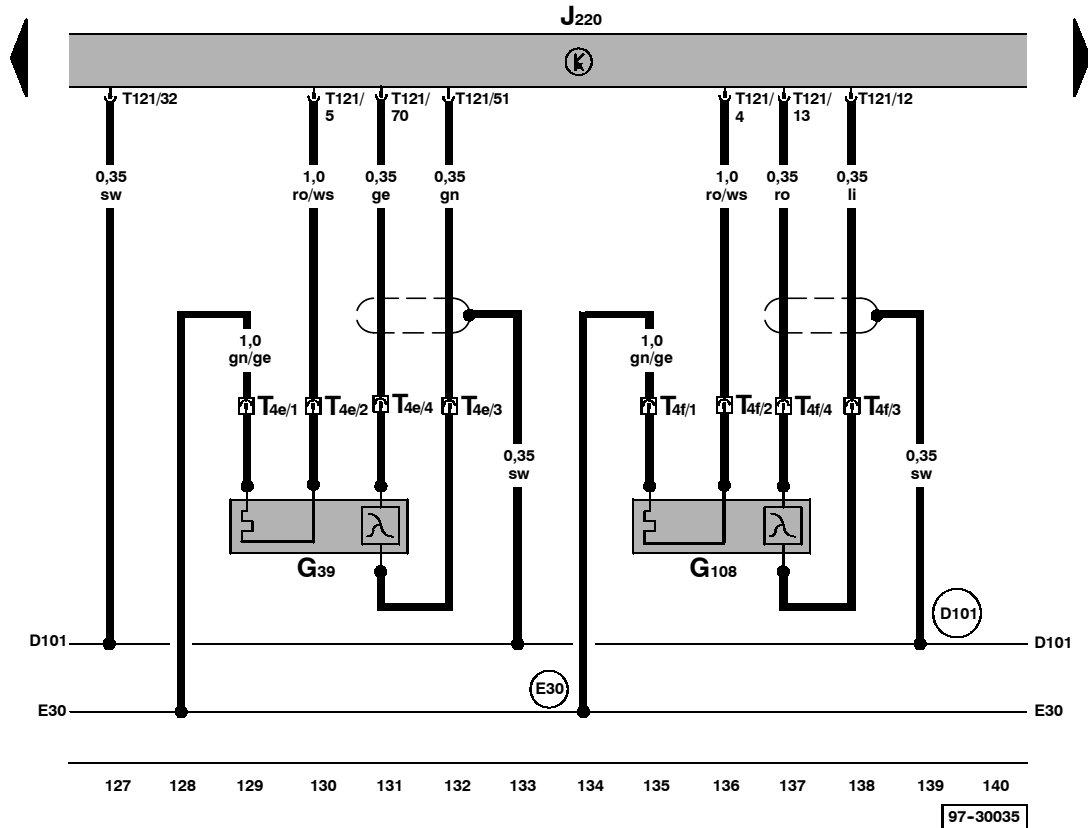


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Motronic Engine Control Module (ECM), Heated Oxygen Sensors

- G39 - Heated Oxygen Sensor (HO2S)
- G108 - Heated Oxygen Sensor (HO2S) 2
- J220 - Motronic Engine Control Module (ECM)
- T4e - 4-Pin Connector, black
- T4f - 4-Pin Connector, black
- T121 - Connector, 121 point, on Motronic Engine Control Module (ECM)

- (D101) - Wire connection -1-, in engine compartment wiring harness
- (E30) - Connection (87a), in wiring harness engine

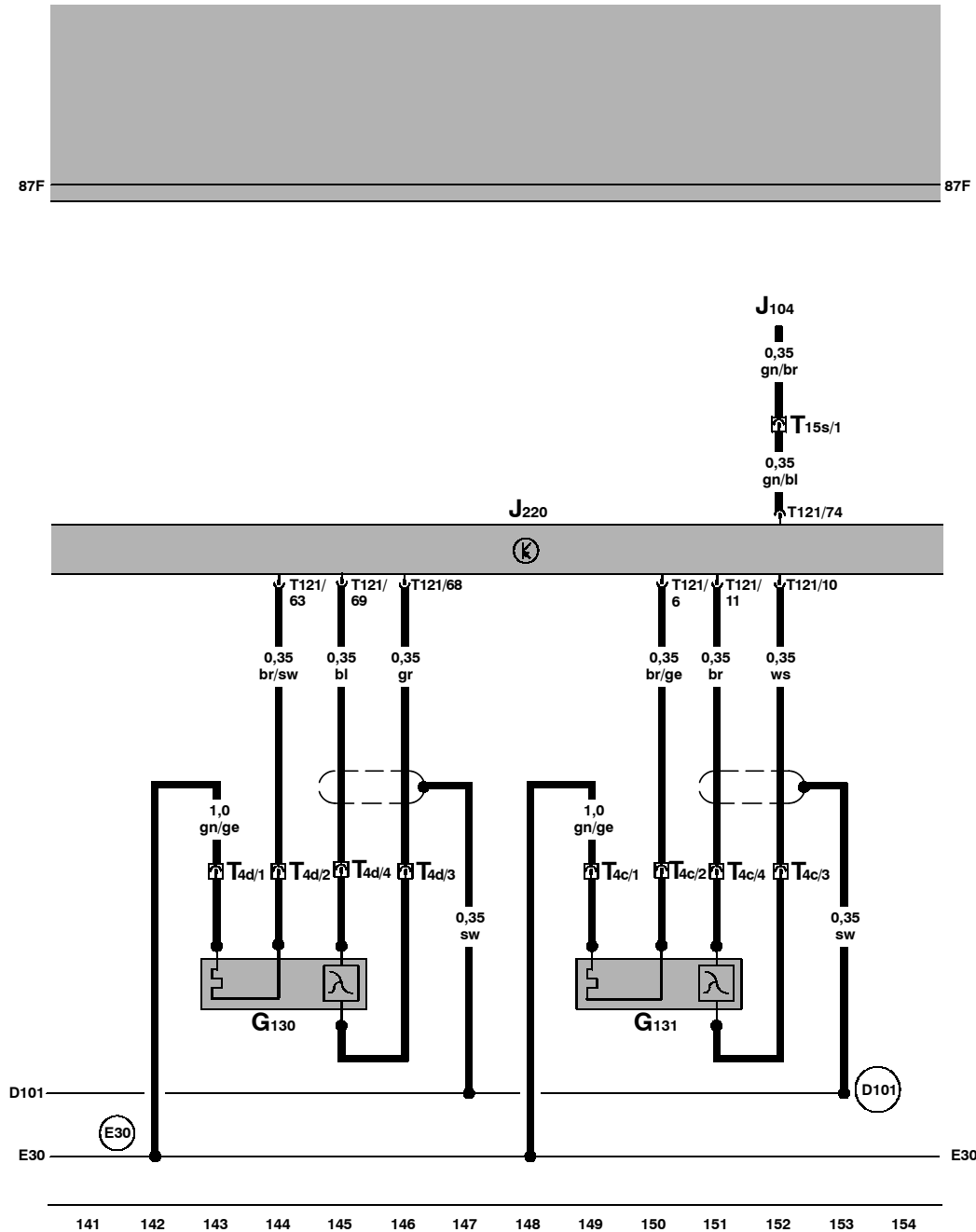


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Motronic Engine Control Module (ECM), Oxygen Sensors Behind Three Way Catalytic Converter (TWC)

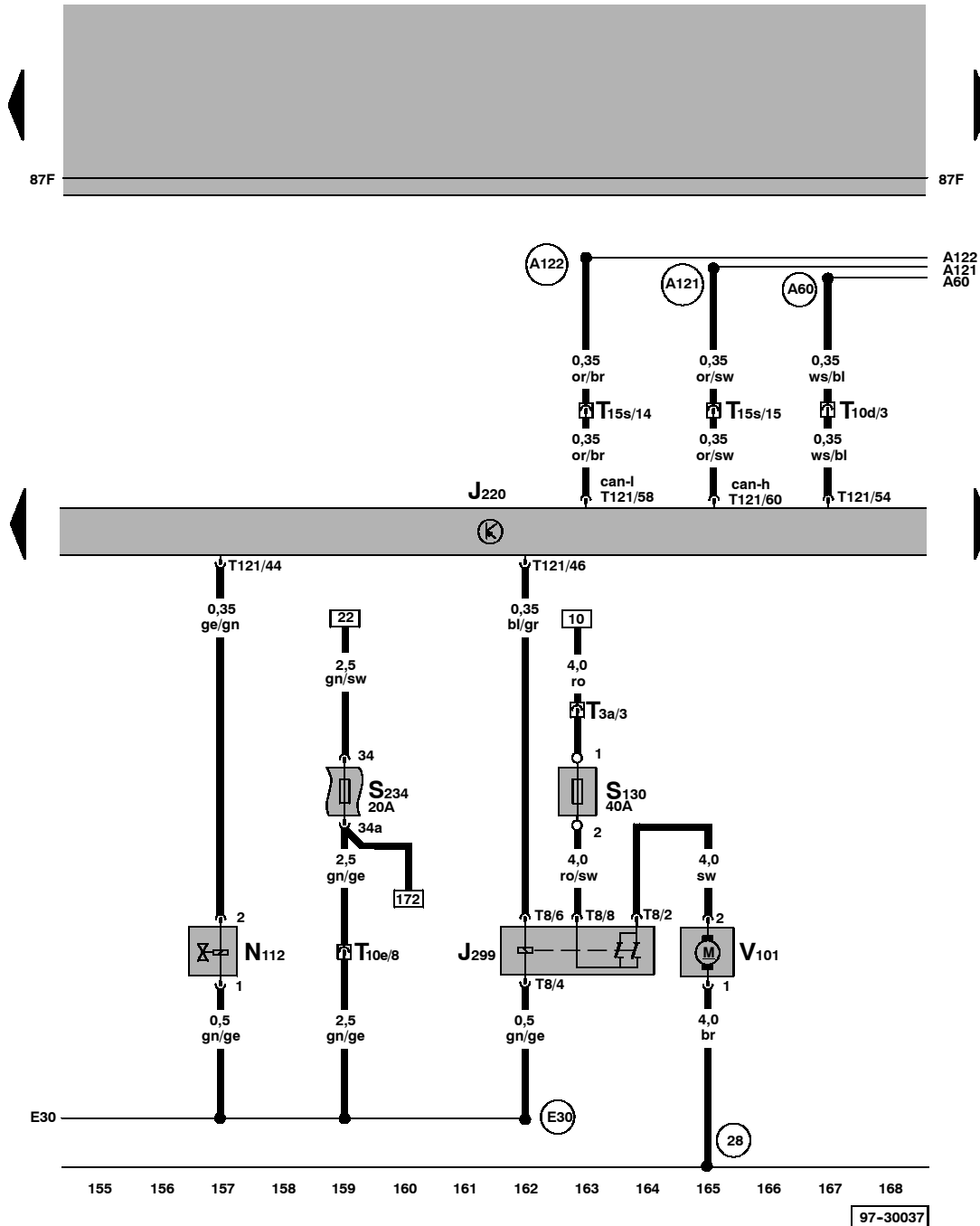
- G130 - Oxygen Sensor (O2S) Behind Three Way Catalytic Converter (TWC)
- G131 - Oxygen Sensor (O2S) 2 Behind Three Way Catalytic Converter (TWC)
- J104 - ABS Control Module (w/EDL)
- J220 - Motronic Engine Control Module (ECM)
- T4c - 4-Pin Connector, brown
- T4d - 4-Pin Connector, green
- T15s - 15-Pin Connector, red, on protective housing for control module, in engine compartment, left
- T121 - Connector, 121 point, on Motronic Engine Control Module (ECM)

- (D101) - Wire connection -1-, in engine compartment wiring harness
- (E30) - Connection (87a), in wiring harness engine



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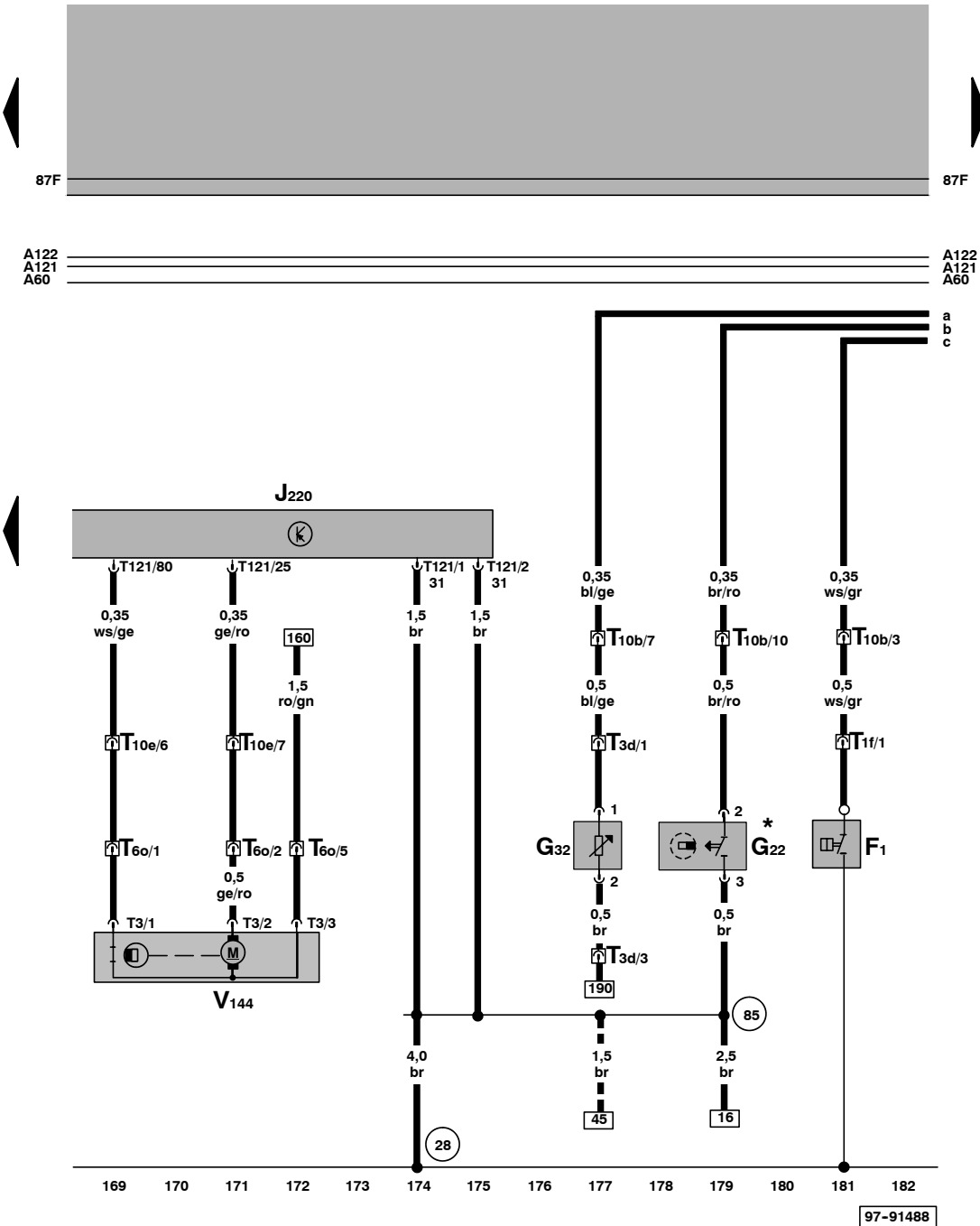
Motronic Engine Control Module (ECM), Secondary Air Injection (AIR) Pump Relay and Motor, Secondary Air Injection (AIR) Solenoid Valve



- J220 - Motronic Engine Control Module (ECM)
- J299 - Secondary Air Injection (AIR) Pump Relay
- N112 - Secondary Air Injection (AIR) Solenoid Valve
- S130 - Fuse for secondary air pump
- S234 - Fuse in fuse holder
- T3a - 3-Pin Connector, green
- T8 - 8-Pin Connector, brown, on Secondary Air Injection (AIR) Pump Relay
- T10d - 10-Pin Connector, brown, on protective housing for control module, in engine compartment, left
- T10e - 10-Pin Connector, orange, on protective housing for control module, in engine compartment, left
- T15s - 15-Pin Connector, red, on protective housing for control module, in engine compartment, left
- T121 - Connector, 121 point, on Motronic Engine Control Module (ECM)
- V101 - Secondary Air Injection (AIR) Pump Motor
- (28) - Ground connection, on firewall
- (A60) - Wire connection (Vehicle speed signal), in instrument cluster wiring harness
- (A121) - Connection (high bus) in instrument panel wiring harness
- (A122) - Connection (low bus) in instrument panel wiring harness
- (E30) - Connection (87a), in wiring harness engine

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Motronic Engine Control Module (ECM), Leak Detection Pump (LDP), Oil Pressure Switch, Speedometer Vehicle Speed Sensor, Engine Coolant Level Sensor

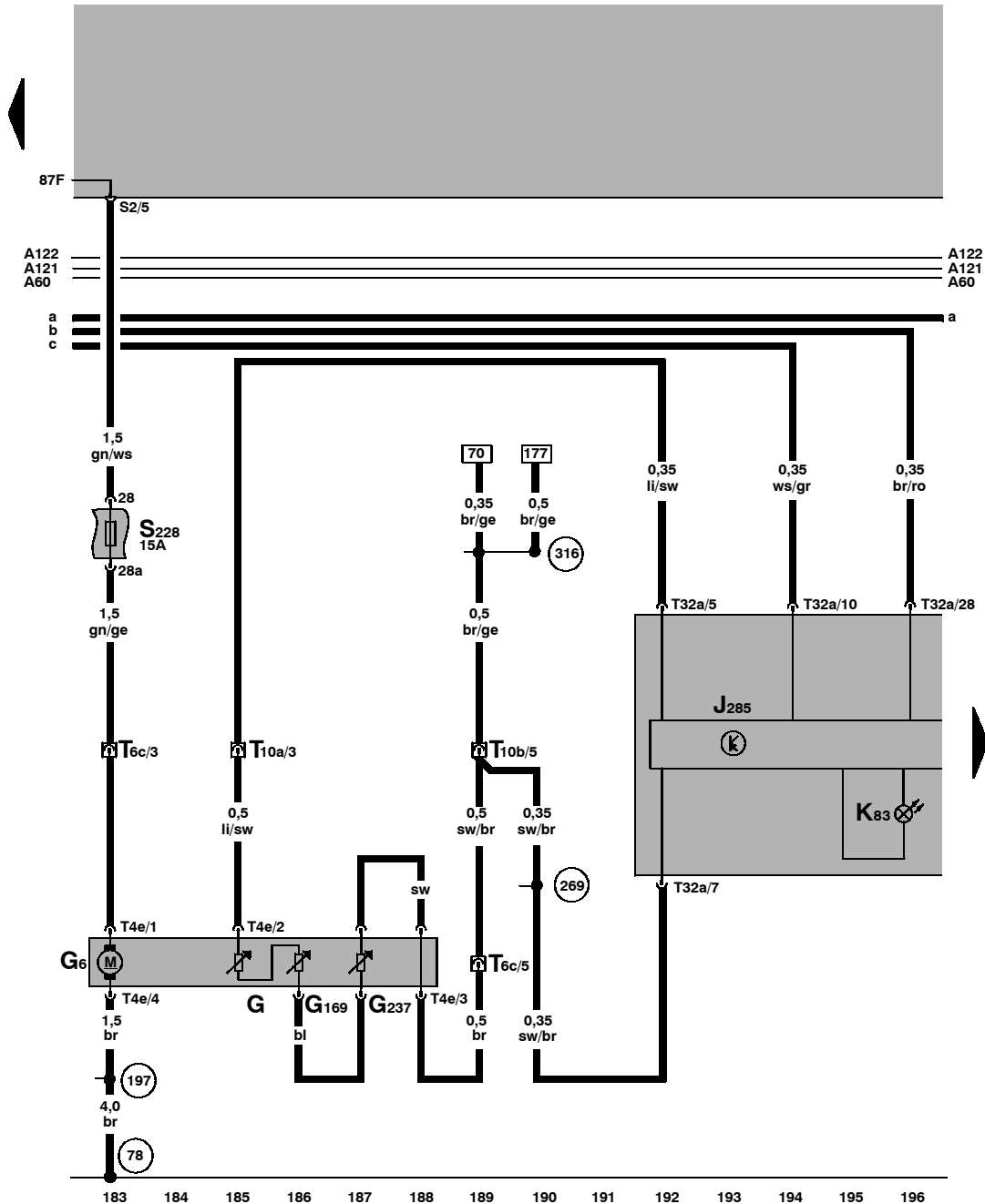


- F1 - Oil Pressure Switch
- G22 - Speedometer Vehicle Speed Sensor (VSS)
- G32 - Engine Coolant Level (ECL) Sensor
- J220 - Motronic Engine Control Module (ECM)
- T1f - Single Connector, black
- T3 - 3-Pin Connector, on Leak Detection Pump
- T3d - 3-Pin Connector
- T6o - 6-Pin Connector, brown, connector station A-pillar, right
- T10b - 10-Pin Connector, black, on protective housing for control module, in engine compartment, left
- T10e - 10-Pin Connector, orange, on protective housing for control module, in engine compartment, left
- T121 - Connector, 121 point, on Motronic Engine Control Module (ECM)
- V144 - Leak Detection Pump (LDP)

- (28) - Ground connection, on firewall
- (85) - Ground connection -1-, in engine compartment wiring harness

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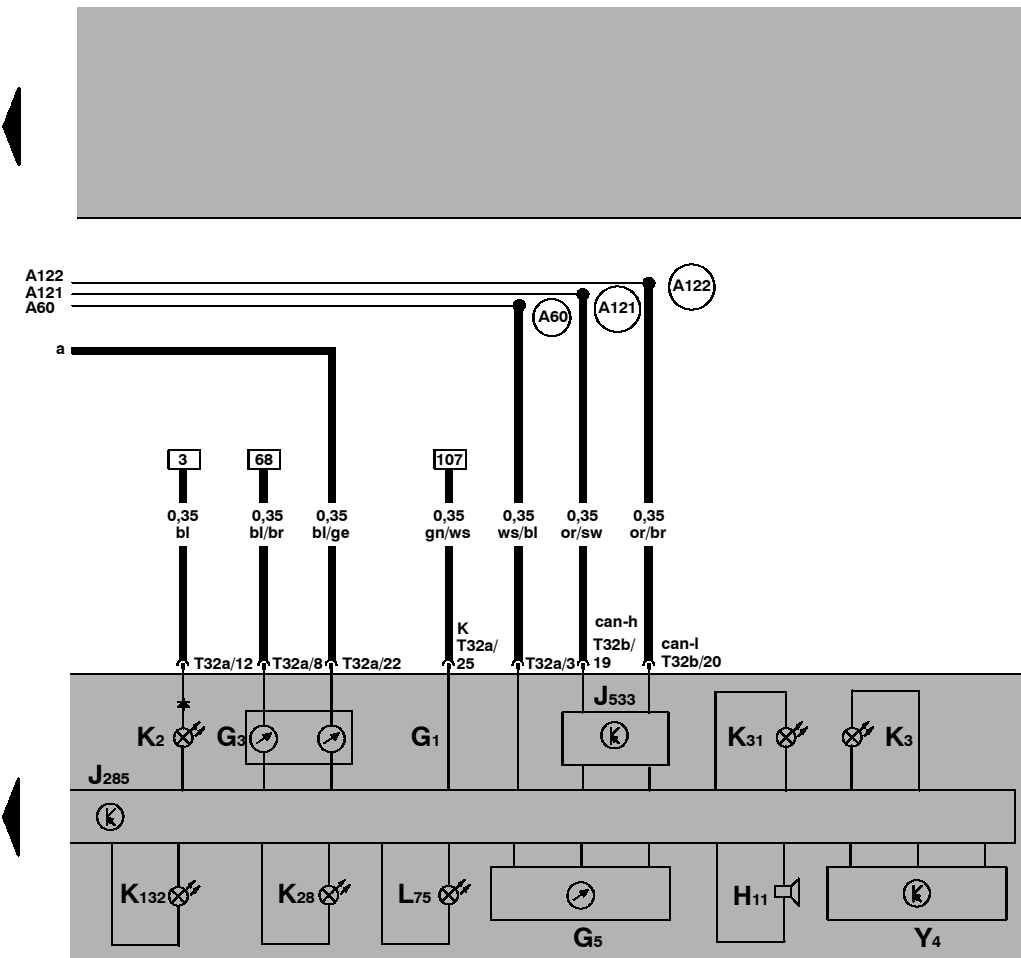


Control module with indicator unit, Fuel Pump (FP), Fuel Level Sensor 2, Fuel Supply Sensor 3, Sender for fuel gauge

- G - Sender for fuel gauge
 - G6 - Fuel Pump (FP)
 - G169 - Fuel Level Sensor 2
 - G237 - Fuel Supply Sensor 3
 - J285 - Control module with indicator unit in instrument panel insert
 - K83 - Malfunction Indicator Lamp (MIL)
 - S228 - Fuse in fuse holder
 - T4e - 4-Pin Connector, near Fuel Pump (FP)
 - T6c - 6-Pin Connector, blue
 - T10a - 10-Pin connector, black
 - T10b - 10-Pin Connector, black, on protective housing for control module, in engine compartment, left
 - T32a - 32-Pin Connector, blue, on instrument cluster
- (78) - Ground Connection (lower right B-pillar)
 - (197) - Ground connection -4-, in wiring harness rear
 - (269) - Ground connection (sensor ground) -1-, in instrument panel wiring harness
 - (316) - Sensor Ground Connection 2 (in engine wiring harness)

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Control module with indicator unit in instrument panel insert, Data Bus On Board Diagnostic Interface



- G1 - Fuel Gauge
- G3 - Engine Coolant Temperature (ECT) Gauge
- G5 - Tachometer
- H11 - Oil Pressure Warning Buzzer
- J285 - Control module with indicator unit in instrument panel insert
- J533 - Data Bus On Board Diagnostic Interface
- K2 - Generator (GEN) Warning Light
- K3 - Oil Pressure Warning Light
- K28 - Engine Coolant Level/Temperature (ECL/ECT) Warning Light
- K31 - Cruise Control Indicator Light
- K132 - Electronic Power Control (EPC) Warning Lamp
- L75 - Digital Display Light
- T32a - 32-Pin Connector, blue, on instrument cluster
- T32b - 32-Pin Connector, green, on instrument cluster
- Y4 - Odometer Display

- (A60) - Wire connection (Vehicle speed signal), in instrument cluster wiring harness
- (A121) - Connection (high bus) in instrument panel wiring harness
- (A122) - Connection (low bus) in instrument panel wiring harness

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