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WM 975219 Removing and installing wire harness for engine

Technical values

Location	Description	Type	Basic value	Tolerance 1	Tolerance 2
Fastening screw (M6) securing cable duct to engine		Tightening torque	10 Nm (7.5 ftlb.)		
Starter lead for terminal 50		Tightening torque	6.5 Nm (5.0 ftlb.)		
Fastening screw (M6) securing ground straps to engine		Tightening torque	10 Nm (7.5 ftlb.)		
Fastening screw (M6) securing ground straps to engine		Tightening torque	10 Nm (7.5 ftlb.)		

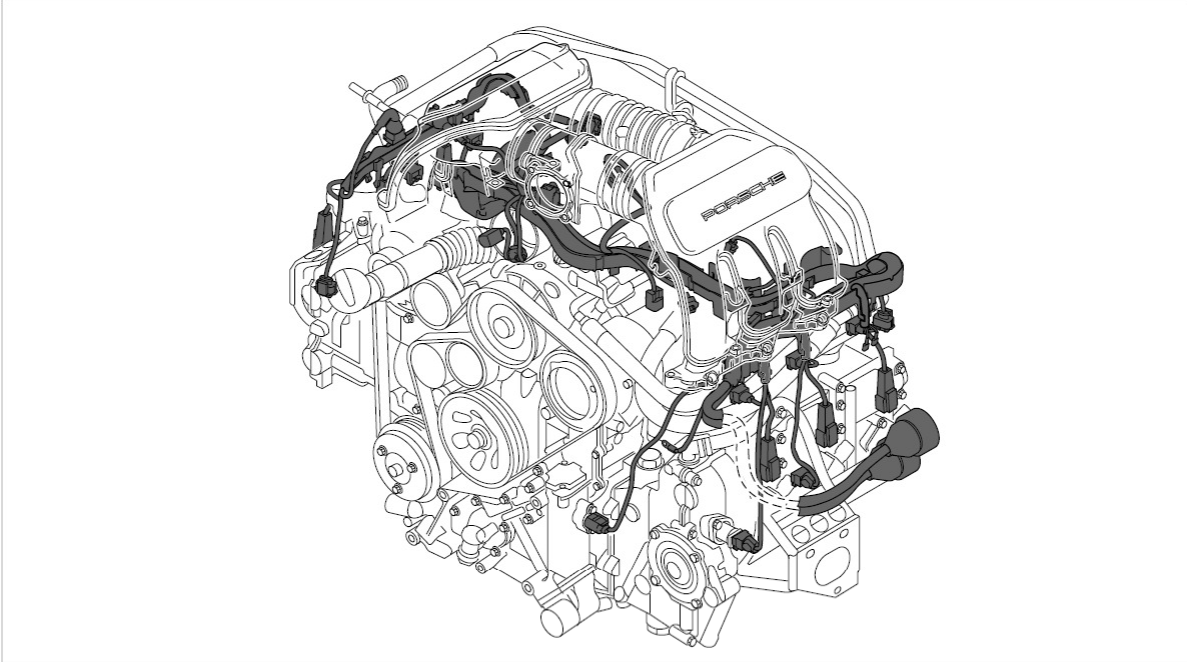
Preliminary work

Preliminary work

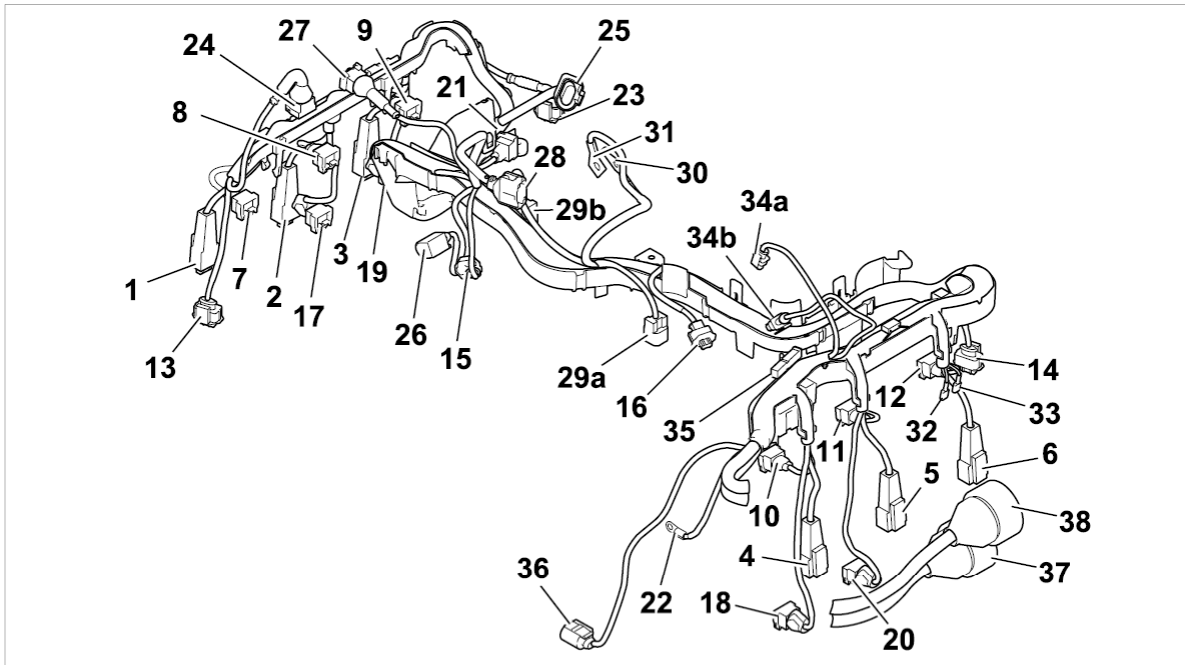
1. Remove rear wheels. → *440519 Removing and installing wheel - section on "Removing"*
2. Disconnect battery. → *271000 Work instructions after disconnecting the battery*
3. Remove generator. → *272219 Removing and installing three-phase generator - section on "Removing"*
4. Remove intake-air distributor. → *244619 Removing and installing intake-air distributor - section on "Removing"*

Removing wire harness for engine

Removing wire harness for engine



Installation position of engine wire harness

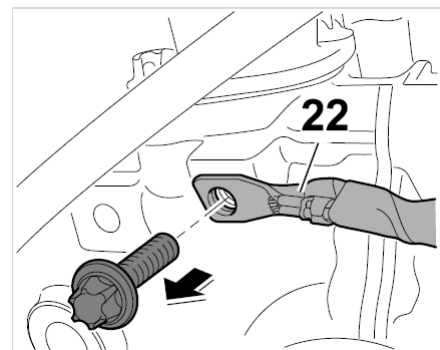


Overview of plugs for engine wire harness

- 1-3** - Ignition coil plug, cylinder 1 - 3
- 4-6** - Ignition coil plug, cylinder 4 - 6
- 7-9** - Fuel injector plug, cylinder 1 - 3
- 10-12** - Fuel injector plug, cylinder 4 - 6
- 13** - Camshaft sensor plug, cylinder row 1 - 3
- 14** - Camshaft sensor plug, cylinder row 4 - 6
- 15** - Knock sensor connector, cylinder row 1 - 3
- 16** - Knock sensor connector, cylinder row 4 - 6
- 17** - Solenoid hydraulic-valve plug (camshaft timing), cylinder row 1 - 3
- 18** - Solenoid hydraulic-valve plug (camshaft timing), cylinder row 4 - 6
- 19** - Solenoid hydraulic-valve plug (valve lift control), cylinder row 1 - 3
- 20** - Solenoid hydraulic-valve plug (valve lift control), cylinder row 4 - 6
- 21** - Ground strap
- 22** - Ground strap
- 23** - Speed sender

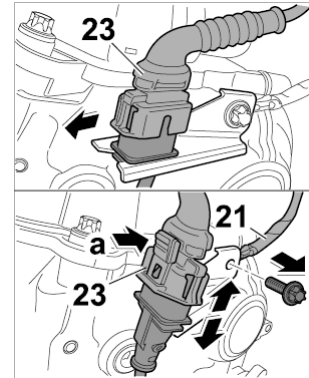
- 24** - Connector for intake-pipe change-over switch
- 25** - Secondary air blower plug
- 26** - Generator plug
- 27** - Tank vent connector
- 28** - Throttle valve connector
- 29A** - Oil level sensor connector, M9605
- 29B** - Oil level sensor connector, M9701
- 30** - Starter lead for terminal 30
- 31** - Starter lead for terminal 50
- 32-33** - Pressure sensor plug
- 34A** - Engine-temperature sensor connector, M9605
- 34B** - Engine-temperature sensor connector, M9701
- 35** - A/C compressor connector
- 36** - Water-temperature sensor connector
- 37-38** - Plug connections for engine wire harness to rear wire harness

1. Release plugs on the six ignition coils **-1 to 6-** and pull them off. → *287020 Removing and installing spark plug - section on "Removing"*
2. Release plugs on the six fuel injectors **-7 to 12-** and pull them off. → *244019 Removing and installing fuel injector - section on "Removing"*
3. Release connectors on both knock sensors **-15 and 16-** and pull them off. → *287219 Removing and installing knock sensor - section on "Removing"*
4. Release plugs on both solenoid hydraulic valves (camshaft timing) **-17 and 18-** and pull them off.
→ *153719 Removing and installing solenoid hydraulic valve (camshaft timing) - section on "Removing"*
5. Release plugs on both solenoid hydraulic valves (valve lift control) **-19 and 20-** and pull them off.
→ *155519 Removing and installing solenoid hydraulic valve (valve lift control) - section on "Removing"*
6. Unscrew ground straps **-22-** .



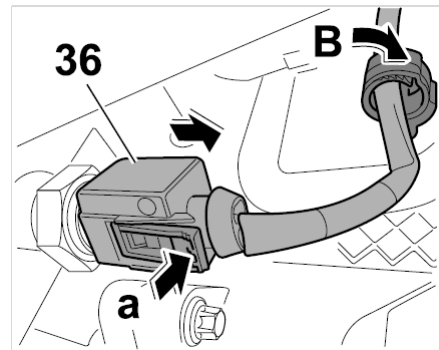
Unscrewing ground straps on engine

- 6.1. Unscrew fastening screw and remove ground straps **-22-** .
7. Disconnect plug connection on speed sender **-23-** and unscrew ground straps **-21-** .



Disconnecting plug connection on speed sender

- 7.1. Pull plug connection **-23-** out of holder.
- 7.2. Release plug connection **-23-** (**-Arrows a-**) and disconnect it.
- 7.3. Unscrew fastening screw and remove ground straps **-21-** .
8. Release securing clip and pull off connector on intake-pipe change-over switch **-24-** .
9. Release plug on secondary air blower **-25-** and pull it off. → *266519 Removing and installing secondary air pump - section on "Removing"*
10. Release securing clip and pull off connector on tank vent **-27-** .
11. Release connector on oil level sensor **-29-** and pull it off.
12. Screw off fastening nut on starter lead for terminal 50 **-31-** and remove it. → *276019 Removing and installing starter - section on "Removing"*
13. Pull off plugs on pressure sensor **-32 and 33-** .
14. Release connector on engine temperature sensor **-34-** and pull it off.
15. Release and disconnect plug connection to compressor **-35-** . → *873419 Removing and installing compressor - section on "Removing"*
16. Pull off connector on water temperature sensor **-36-** .

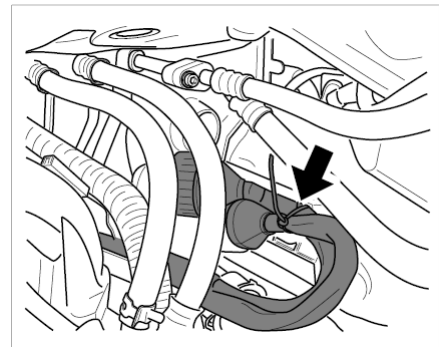


Pulling off connector on water temperature sensor

16.1. Open holder **-Arrow B-** and remove lead.

16.2. Release connector on water temperature sensor **-36-** (**-Arrow a-**) and pull it off.

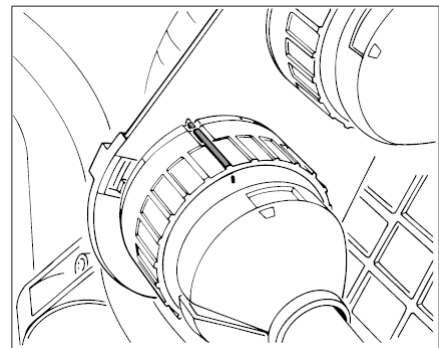
17. Disconnect plug connection for engine wire harness to rear wire harness **-37 and 38-** . → 100119 *Removing and installing engine - section on "Removing"*



Engine wire harness attachment

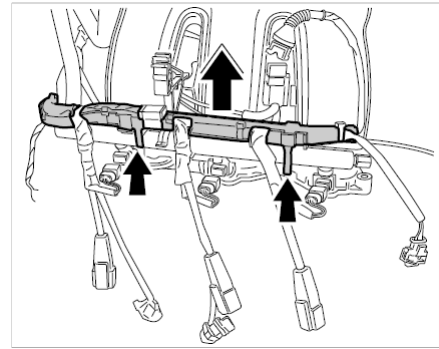
17.1. Remove tie-wrap **-Arrow-** .

17.2. Release engine wire harness at the two plug connections and disconnect it by turning the bayonet locks anti-clockwise.



Round connectors for engine wire harness

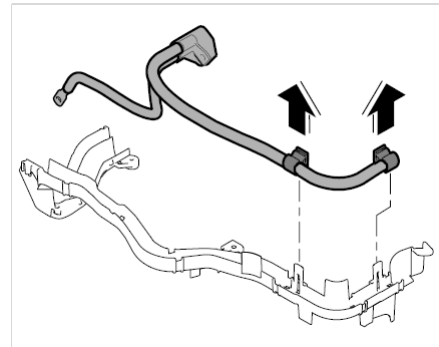
18. Unclip cable duct on the left and right.



Unclipping cable duct on left and right

18.1. Unclip cable duct on the left and right at the fuel distributor pipes **-Arrows-** .

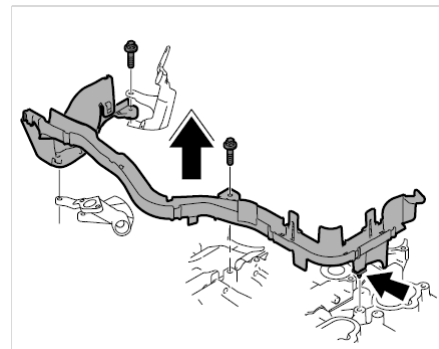
19. Unclip starter lead.



Unclipping starter lead at cable duct

19.1. Unclip starter lead at cable duct **-Arrows-** .

20. Remove cable duct.



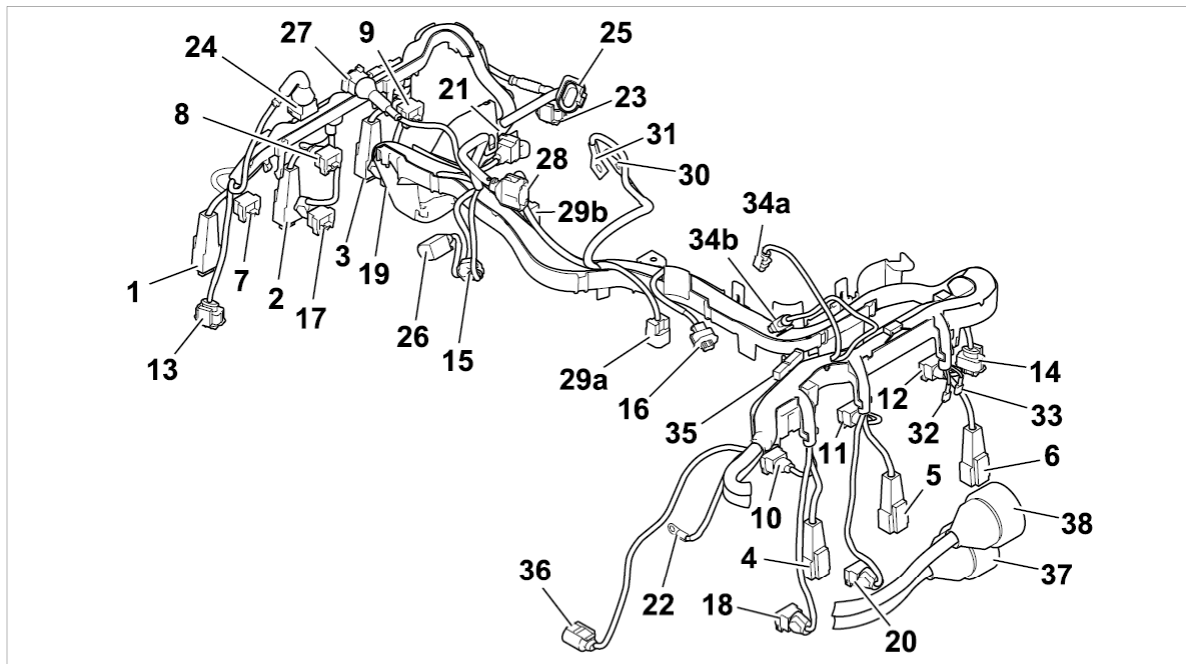
Removing cable duct

20.1. Unscrew fastening screws, unclip cable duct **-Arrow-** and remove it.

21. Remove wire harness for engine.

Installing wire harness for engine

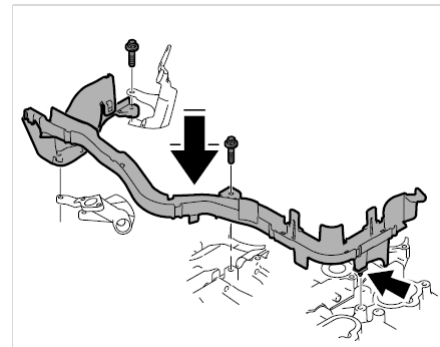
Installing wire harness for engine

*Overview of plugs for engine wire harness*

- 1-3** - Ignition coil plug, cylinder 1 - 3
- 4-6** - Ignition coil plug, cylinder 4 - 6
- 7-9** - Fuel injector plug, cylinder 1 - 3
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- 13** - Camshaft sensor plug, cylinder row 1 - 3
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- 15** - Knock sensor connector, cylinder row 1 - 3
- 16** - Knock sensor connector, cylinder row 4 - 6
- 17** - Solenoid hydraulic-valve plug (camshaft timing), cylinder row 1 - 3
- 18** - Solenoid hydraulic-valve plug (camshaft timing), cylinder row 4 - 6
- 19** - Solenoid hydraulic-valve plug (valve lift control), cylinder row 1 - 3
- 20** - Solenoid hydraulic-valve plug (valve lift control), cylinder row 4 - 6
- 21** - Ground strap

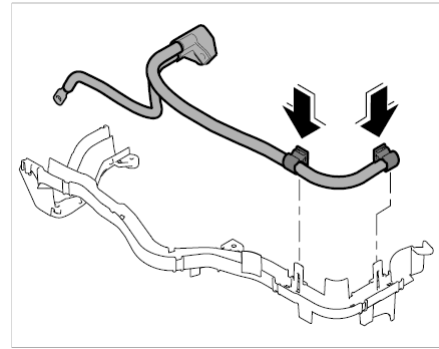
- 22 - Ground strap
- 23 - Speed sender
- 24 - Connector for intake-pipe change-over switch
- 25 - Secondary air blower plug
- 26 - Generator plug
- 27 - Tank vent connector
- 28 - Throttle valve connector
- 29A - Oil level sensor connector, M9605
- 29B - Oil level sensor connector, M9701
- 30 - Starter lead for terminal 30
- 31 - Starter lead for terminal 50
- 32-33 - Pressure sensor plug
- 34A - Engine-temperature sensor connector, M9605
- 34B - Engine-temperature sensor connector, M9701
- 35 - A/C compressor connector
- 36 - Water-temperature sensor connector
- 37-38 - Plug connections for engine wire harness to rear wire harness

1. Lay out wire harness for engine.
2. Install cable duct.



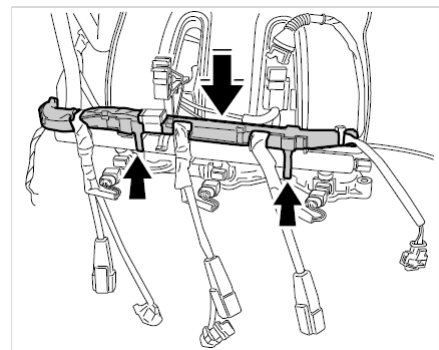
Installing cable duct

- 2.1. Clip in cable duct **-Arrows-** and secure with the fastening screws. → **Tightening torque: 10 Nm (7.5 ftlb.)**
3. Clip in starter lead.



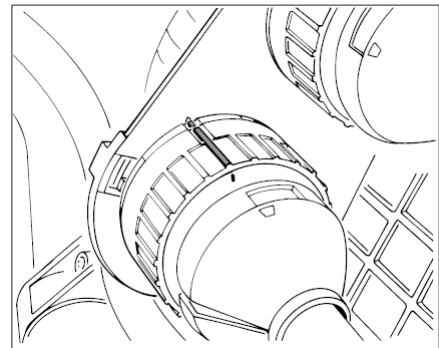
Clipping in starter lead at cable duct

- 3.1. Clip in starter lead at cable duct **-Arrows-** .
- 4. Clip in cable duct at the left and right.



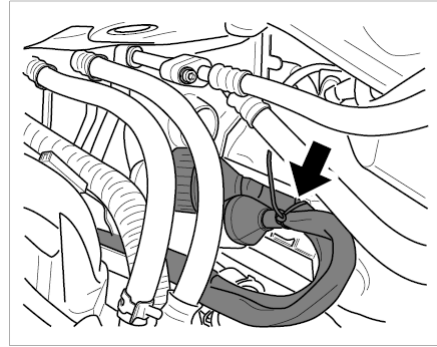
Clipping in cable duct at left and right

- 4.1. Position and clip in cable duct on the left and right at the fuel distributor pipes **-Arrows-** .
- 5. Push plug connection for engine wire harness to rear wire harness **-37 and 38-** together. → 100119 Removing and installing engine - section on "Installing"



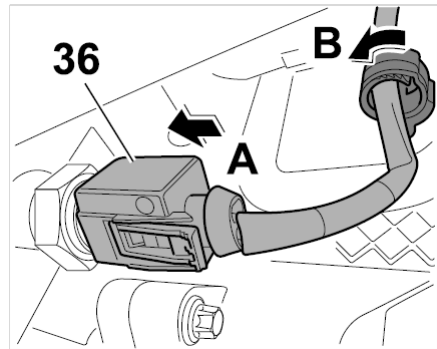
Round connectors for engine wire harness

- 5.1. Connect engine wire harness at the two plug connections and lock it by turning the bayonet locks clockwise.
- 5.2. Fit new tie-wrap **-Arrow-** .



Engine wire harness attachment

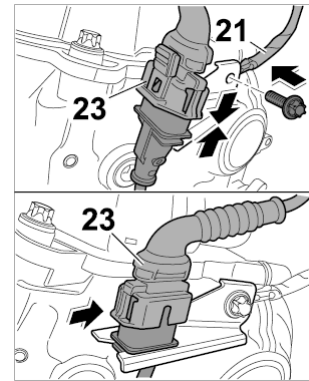
6. Attach connector on water temperature sensor **-36-** .



Attaching connector on water temperature sensor

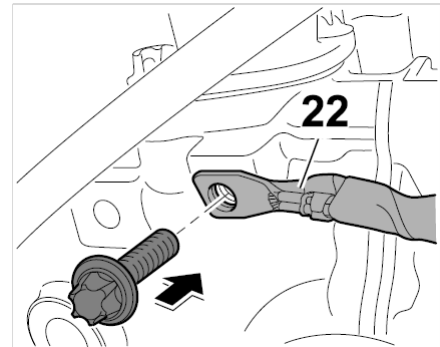
- 6.1. Plug in connector on water temperature sensor **-36-** (**-Arrow A-**) until it engages firmly.
- 6.2. Insert wire into the holder and close holder **-Arrow B-** .
7. Press plug connection for compressor **-35-** together until it is felt to engage. → *873419 Removing and installing compressor - section on "Installing"*
8. Plug in connector on engine temperature sensor **-34-** until it engages firmly.
9. Connect plugs on pressure sensor **-32 and 33-** .
10. Position starter lead for terminal 50 **-31-** and secure with fastening nut. → **Tightening torque: 6.5 Nm (5.0 ftlb.)** → *276019 Removing and installing starter - section on "Installing"*
11. Plug in connector on oil level sensor **-29-** until it engages securely.
12. Plug in connector on tank vent **-27-** until the securing clip engages securely.
13. Connect plug on secondary air blower **-25-** until it engages firmly. → *266519 Removing and installing secondary air pump - section on "Installing"*
14. Plug in connector on intake-pipe change-over switch **-24-** until the securing clip engages securely.

15. Screw down ground straps **-21-** and connect plug connection on speed sender **-23-** .



Connecting plug connection on speed sender

- 15.1. Position ground straps **-21-** and screw down the fastening screw. → **Tightening torque: 10 Nm (7.5 ftlb.)**
- 15.2. Push the plug connection **-23-** together until it is felt to engage.
- 15.3. Push plug connection **-23-** into holder.
16. Screw down ground straps **-22-** .



Screwing down ground straps on engine

- 16.1. Position ground straps **-22-** and screw down the fastening screw. → **Tightening torque: 10 Nm (7.5 ftlb.)**
17. Connect plugs on the two solenoid hydraulic valves (valve lift control) **-19 and 20-** until they click into place. → *155519 Removing and installing solenoid hydraulic valve (valve lift control) - section on "Installing"*
18. Connect plugs on the two solenoid hydraulic valves (camshaft timing) **-17 and 18-** until they click into place. → *153719 Removing and installing solenoid hydraulic valve (camshaft timing) - section on "Installing"*
19. Plug in connectors on the two knock sensors **-15 and 16-** until they click into place. → *287219 Removing and installing knock sensor - section on "Installing"*
20. Connect plugs on the six fuel injectors **-7 to 12-** until they engage securely. → *244019 Removing and installing fuel injector - section on "Installing"*

21. Connect plugs on the six ignition coils **-1 to 6-** until they engage securely. → *287020 Removing and installing spark plug - section on "Installing"*

Subsequent work

Subsequent work

1. Install intake-air distributor. → *244619 Removing and installing intake-air distributor - section on "Installing"*
2. Install the generator. → *272219 Removing and installing three-phase generator - section on "Installing"*
3. Carry out work instructions after disconnecting the battery. → *271000 Work instructions after disconnecting the battery*
4. Mount rear wheels. → *440519 Removing and installing wheel - section on "Installing"*

997110, 997111, 997120, 997121, 997310, 997311, 997320, 997321, 997410, 997411, 997430, 997431, 997510, 997511, 997520, 997521, 997610, 997611, 997620, 997621

Model year as of 2005, Model year up to 2008

C00, C02, C05, C07, C08, C09, C10, C11, C12, C13, C14, C15, C16, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C32, C33, C34, C35, C36, C37, C38, C39, C45, C46, C98, C99