

Technical Information

Cayenne (Turbo) **1**
4/05 1001

Cayenne Turbo Increased Performance Kit (I No. E 81)

Binder - 1, Engine (V8), Part 1
 This bulletin replaces bulletin Group 4, #18/04, dated 1-27-05.

Vehicle Type: **Cayenne Turbo**
 Model Year: **As of '03 (3)**
 Concerns: **Increased Performance Kit installation instructions.**

Important:
Due to the increased space requirement of the 19-inch brake disc and brake caliper, the following wheels must not be used on the Cayenne Turbo with Increased Performance Kit:

- 9 J x 20 H2, SportDesign, part number, 955.362.140.50 9A1 (7L5601025E 9A1)
- 9 J x 20 H2, SportTechno, part number, 955.362.140.60 9A1 (7L5601025F 9A1)

For additional information see, Technical Information Bulletin, Cayenne Turbo, Group 4, #4/05, Increased Performance - Shaking in Steering Wheel

The following additional combinations cannot be used with the Increased Performance Kit:

- 18-inch wheels

For an external spare wheel which will be transported in the spare wheel carrier, the combination with SportTechno 10 x 20 wheels is not possible.

Information: A parts set – "Increased performance" – is available to retrofit the standard Cayenne Turbo with an increased performance to 500 hp (368 kW). The following parts are replaced or changed on the vehicle:

- new charge air cooler with increased cross section, modified supply and ventilation guides
- reinforced spring struts, larger brake discs and brake calipers
- reinforced tie rods as well as improved rubber mounting on the control arms
- new level control unit
- modified map for DME control module

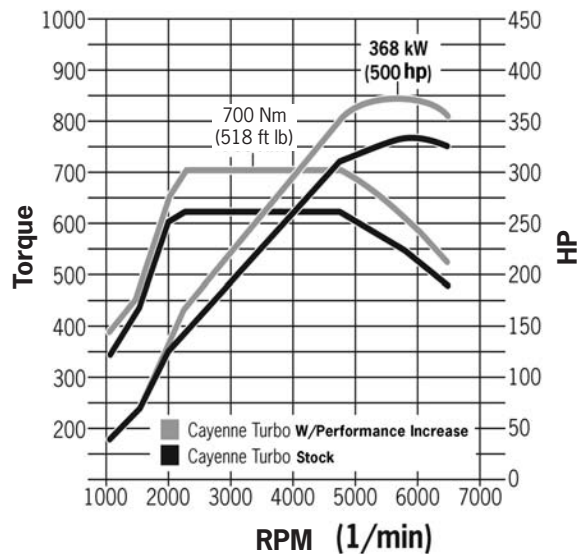
These parts were tested and approved by Porsche using complex tests such as service life testing on top speed tracks under the most extreme climate conditions.

Information:
(cont'd)

Retrofitting the Cayenne Turbo produces:

- an increase in performance from 450 hp (331 kW) to 500 hp (368 kW)
- an increase in torque from 459 ft lb (620 Nm) to 518 ft lb (700 Nm)
- an increase in acceleration 0 - 62 mph (0 - 100 Km/h) from 5.6 to 5.3 seconds
- an increase in top speed by approx. 2 mph
- an improvement in road handling

The DME control unit must be programmed using the PIWIS Tester in order to increase performance. The immobilizer code and another code (**Turbo increased performance enabling code - FSC LS Turbo**) is needed for this. Once you have ordered the parts, i.e. entered the part numbers and VIN in the System Application Products (SAP), the Turbo increased performance enabling code together with the immobilizer code in the Integrated Porsche Dealer Processing System (IPAS) can be queried within one day in the Code info menu.

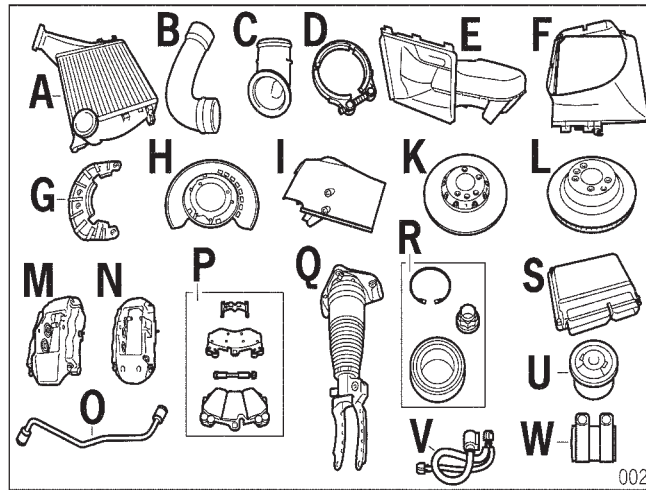


Parts Information:

Part Number	Qty.	Description
955.044.100.00		Set, Increased Performance Kit
955.341.075.20 *	1 x	Self-leveling sensor, Front left
955.341.076.20 *	1 x	Self-leveling sensor, Front right
955.331.077.20 *	2 x	Self-leveling sensor Rear

* For vehicles up to chassis number 9PA4LA93465, the self-leveling sensors for the front axle and rear axle need to be replaced. The parts must be ordered separately.

Parts Information: Parts List
(cont'd)



Part Number	Qty.	Description
955.110.803.41	1 x	Charge air cooler, left (Item A)
955.110.804.41	1 x	Charge air cooler, right (not shown)
955.110.837.00	1 x	Left pressure hose (Item B)
955.110.838.00	1 x	Right pressure hose (not shown)
N 024 505 6	2 x	Hose clamp (not shown)
955.110.367.00	1 x	Right pressure pipe (Item C)
955.110.368.00	1 x	Left pressure pipe (not shown)
955.110.807.00	2 x	Clamp (Item D)
955.575.331.40	1 x	Left supply air guide (Item E)
955.575.332.40	1 x	Right supply air guide (not shown)
955.575.339.40	1 x	Left ventilation guide (Item F)
955.575.340.40	1 x	Right ventilation guide (not shown)
N 103 231 01	4 x	M6 x 20 screw (not shown)
955.351.801.51	2 x	Front brake cover panel (Item G)
955.352.802.50	1 x	Rear right brake cover panel (Item H)
955.352.801.50	1 x	Rear left brake cover panel (not shown)
955.351.117.00	1 x	Left air-guide element (Item I)
955.351.118.00	1 x	Right air-guide element (not shown)
N 105 475 01	4 x	M6 x 80 cheese head bolt (not shown)
N 102 058 02	4 x	M6 hexagon nut (not shown)
955.351.401.60	1 x	Front left brake disc (Item K)
955.351.402.60	1 x	Front right brake disc (not shown)
955.352.401.50	2 x	Rear brake disc (Item L)
955.351.421.61	1 x	Left brake caliper, Front (not shown)
955.351.422.61	1 x	Right brake caliper, Front (Item M)
955.352.421.61	1 x	Left brake caliper, Rear (Item N)
955.352.422.61	1 x	Right brake caliper, Rear (not shown)
955.355.581.50	1 x	Left brake line, Front (Item O)
955.355.582.50	1 x	Right brake line, Front (not shown)
944.612.627.00	2 x	Cable holder (not shown)
N 105 326 01	2 x	M14 x 1.5 x 102 hexagon-head bolt (not shown)

Parts Information:
(cont'd)

Part Number	Qty.	Description
N 105 234 01	12 x	M10 x 52 cheese head bolt (not shown)
N 906 854 02	4x	M16 x 1.5 x 48 screw (not shown)
N 105 556 01	4x	M14 x 1.5 x 40 screw (not shown)
N 010 237 12	6 x	M8 x 12 screw (not shown)
N 014 739 10	4 x	M8 x 16 screw (not shown)
N 909 768 01	4 x	M6 x 12 screw (not shown)
N 910 282 01	4 x	M12 x 1.5 screw (not shown)
N 910 380 01	2 x	M12 x 1.5 screw plug (not shown)
955.341.901.00	2 x	Rear wheel bearing (Item P)
955.343.033.50	1 x	Left spring strut, Front (Item Q)
955.343.034.50	1 x	Right spring strut, Front (not shown)
955.331.217.00	4 x	Eccentric screw (not shown)
955.347.031.50	1 x	Left tie rod (not shown)
955.347.032.50	1 x	Right tie rod (not shown)
955.351.939.50	1 x	Front brake pads (Item R)
955.618.301.00	1 x	Level adjustment control unit (Item S)
955.341.242.50	2 x	Trailing arm rubber mounting (Item U)
N 104 029 01	5 x	M12 x 1.5 hexagon nut (not shown)
N 102 112.01	3 x	M12 x 1.5 x 90 hexagon-head bolt (not shown)
N 909 417 01	6 x	M10 x 45 cheese head bolt (not shown)
955.612.365.30	2 x	Rear warning contact (Item V)
955.612.365.00	2 x	Front warning contact (not shown)
955.111.220.00	2 x	Clamping sleeves (Item W)
955.352.939.50	1 x	Rear brake pads
N 102 861 02	4 x	M10 hexagon nut (not shown)
N 105 760 01	2 x	M12 x 1.5 x 120 hexagon-head bolt (not shown)
N 909 413 01	2 x	M12 x 1.5 hexagon nut (not shown)
N 023 00 28	2 x	M6 hexagon nut (not shown)
N 904 407 02	2 x	M6 x 15 hexagon-head bolt (not shown)
N 103 353 02	2 x	M14 x 1.5 hexagon nut (not shown)
N 102 686 02	4 x	M14 x 1.5 hexagon nut (not shown)
N 102 902 04	4 x	M10 x 70 hexagon-head bolt (not shown)
N 909 771 01	4 x	M14 x 1.5 hexagon nut (not shown)
N 908 476 01	4 x	M10 x 25 hexagon-head bolt (not shown)
N 105 668 01	2 x	M12 x 1.5 x 60 hexagon-head bolt (not shown)
N 105 517 01	2 x	Clamp (not shown)
N 901 809 02	2 x	Sealing ring (not shown)
955 332 649 00	1 x	Sealing ring (not shown)
955.341.640.00	2 x	Lock nut (not shown)
N 910 400 01	6 x	M10 x 37 screw (not shown)
955 575.395.00	2 x	Air guide (not shown)
N 106 203 01	2 x	Sealing ring (not shown)

Materials:	Part number	Qty.	Description
	000.043.204.21	25 ml	Optitemp LG2
	---	--	Optimol TA aluminium paste
Tools:			
	Combination wrench, a/f 8/10 mm		Brake bleeding device
	Transmission jack		PIWIS Tester
	Toggle w/ 3/4" extension		Shop light
	T10230 tool kit		Side cutters
	3/8" adapter		Ring wrench, angled a/f 18
	T10230 tool kit		Piston resetting fixture No. 144
	Torx wrench T50		Press-out tool T 10187
	Torx screwdriver 9546		Snap ring pliers
	Phillips screwdriver (large)		Master set T 10190
	Attachment T 10205		Pole terminal pull-off device 60 x 40 No. 99
	Battery charger		Separating device Ø 12-155 mm No. 111
	Foot pump VAS 6179		Adapter T 10157/1
	Assembly fixture T10206		Open-jawed wrench insert a/f 38 No. 95-2
	Torque angle torque wrench No. 88		Air-spring filling unit VAS 6231
	Steel stamping letter set No. 128-1		Pliers for lug-type hose clamps No. 74
	Socket a/f 10/12/13/15/16/19/21/32/18		ATF filling device for filling transmission oil 161
	Ratchet 1/4", 1/2", 3/8" with extension		Pressure gauge with connection line VAS 6179/1
	Hexagon socket a/f 3/6 mm		Universal drive shafts/wheel-hub extractor 87-1
	Flat screwdriver (medium, large)		Multiple-tooth long socket wrench insert M12, 32 long
	Crows foot wrench insert a/f 24 No. 95-1		Torque wrench 160 - 800 Nm (118-590 ftlb.) No. 91
	Torque wrench 2 - 10, 10 - 60, 40 - 200 Nm (1.5-7.5, 7.5-44, 30-148 ftlb.) No. 90		

Important: **In order to obtain the factory vacuum filling level of the hydraulic unit, pay attention to the 19-inch brake system during retrofitting so that there is always brake fluid in the reservoir. For this reason, the end pieces of the opened brake lines need to be sealed with plugs to protect from draining the system during the retrofitting process.**

Applicable safety warnings associated with the work procedures as noted in the workshop manual must be observed.

Work Procedure:

1. Preparatory Work

- 1.1 Connect charger to battery (See Workshop Manual, Group 2: 2706 IN).
- 1.2 Remove wheel hub caps and loosen drive shaft lock nuts in the front and rear.
- 1.3 Remove front and rear wheels (See Workshop Manual, Group 4: 44 05 19).
- 1.4 Remove exhaust system (See Workshop Manual, Group 2: 26 01 19).
- 1.5 **Only** vehicle with rear-differential lock:
Remove rear-differential lock servo motor (See Workshop Manual, Group 3: 39 77 19).
- 1.6 Unscrew fastening screws from cardan shaft (See Workshop Manual, Group 3: 39 35 19) and drive shafts to rear wheel drive assembly (See Workshop Manual, Group 4: 42 21 19) and tie up cardan shaft and drive shafts.
- 1.7 Unscrew fastening screws from stabilizer on rear axle housing (See Workshop Manual, Group 4: 42 90 19).
- 1.8 Remove rear final drive (See, Workshop Manual, Group 3: 39 01 19).
- 1.9 Press rear drive shafts with universal drive shaft/wheel hub extractor 87-1 out of wheel hubs (See Workshop Manual, Group 4: 42 21 19).

2. Convert rear axle (RA).

- 2.1 Remove brake caliper (See Workshop Manual, Group 4: 47 41 19) and brake disc (Workshop Manual, Group 4: 46 53 19).
- 2.2 Disengage the cable of the foot operated parking brake and remove the brake shoes.
- 2.3 Remove speed sensor (See Workshop Manual, Group 4: 45 11 19).
- 2.4 Remove wheel bearing (See Workshop Manual, Group 4: 42 58 19).
- 2.5 Unscrew fastening screws from brake cover panel and take off brake cover panel.

- 2.6 Install brake cover panel (955.352.802.50) with screws (N 014 739 10 and N 909 768 01) onto wheel carrier.

Tightening torque:

Location	Nm (ftlb.)
M8 x16 screw, caliper carrier to wheel carrier	20 (15)
M6 x12 screw, caliper carrier to wheel carrier	8 (6)

- 2.7 Install wheel bearing (See Workshop Manual, Group 4: 42 58 19).
- 2.8 Install speed sensor (See, Workshop Manual, Group 4: 45 11 19).
Tightening torque: 6 Nm (4.5 ftlb.)

Work Procedure:
(cont'd)

- 2.9 Engage the brake shoes and cable of the foot operated parking brake.
- 2.10 Install new brake disc (955.352.401.50) (See Workshop Manual, Group 4: 46 53 19).
Tightening torque: 15 Nm (11 ftlb.)
Note: Use new screw (N 910 282 01).
- 2.11 **Only** vehicles with 200 Hz self-leveling sensors.
 - 2.11.1 Remove self-leveling sensor (See Workshop Manual, Group 4: 43 19 19).
 - 2.11.2 Install new self-leveling sensor (955.331.077.20). See Workshop Manual '431919 Removing and installing rear level sensor - section on "Installing".
Tightening torque: 4.5 Nm (3 ftlb.)
- 2.12 Install new brake caliper (955.352.422.61) (See Workshop Manual, Group 4: 47 41 19).
Note: Use new screw (N 105 556 01).
Tightening torque:

Location	Nm (ftlb.)
Brake caliper to wheel carrier	180 (133)
Brake line holder to brake caliper	8 (6)
Brake pressure line to brake calliper	14 (10.5)
- 2.13 Install brake pads (955.351.939.50) (See Workshop Manual, Group 4: 46 36 20).
Tightening torque: Brake pad retaining pin, 30 Nm (22 ftlb.)
- 2.14 Adjust foot-operated parking brake (See Workshop Manual, Group 4: 46 83 16).
Note: Screw in screw plug (N 910 380 01) in brake disc.
- 3. **Concluding work on rear axle (RA).**
 - 3.1 Insert drive shafts in wheel bearing housing (wheel carrier), if necessary pull in with assembly fixture T10206 and tie up with tie-wraps.
Note:
Lightly grease axle nuts only on mounting-face ring as well as teeth of the drive shaft with Optimal TA aluminium paste.
 - 3.2 Install final drive (See Workshop Manual, Group 3: 39 01 19).
Tightening torque: 90 Nm (67 ftlb.) + 90°
Note:
Use new nuts (N 104 029 01) and screws (N 102 112 01).
 - 3.3 Install cardan shaft and drive shafts with new fastening screws to rear wheel drive assembly (See Workshop Manual, Group 3: 39 35 19/Group 4: 42 21 19).
Tightening torque:

Location	Nm (ftlb.)
Fastening screw for drive shaft (N 105 234 01) to final drive	50 (37) + 90°
Fastening screw for cardan shaft (N 909 417 01) to final drive	30 (22 ftlb.) + 90°

Work Procedure:
(cont'd)

- 3.4 Attach stabilizer to rear axle housing (See Workshop Manual, Group 4: 42 90 19).
Tightening torque: 50 Nm (37 ftlb.)
Note:
Use new screws (N 908 476 01).
- 3.5 **Only** vehicle with rear differential lock:
Install servo motor for rear differential lock with new sealing ring (955.332.649.00) (See Workshop Manual, Group 3: 39 77 19).
Tightening torque: 10 Nm (7.5 ftlb.)
- 3.6 Check oil level for rear final drive and top up if necessary (See Workshop Manual, Group 3: 39 90 35).
- 4. Install exhaust system (POSES, Workshop Manual, Group 2: 26 01 19).
Note:
Replace clamping sleeves.
Tightening torque:

Location	Nm (ftlb.)
Exhaust system fastening screws	23 (17)
Clamps	60 (44)
- 5. **Preparatory work for converting front axle (FA).**
 - 5.1 Remove front engine compartment trim panel (See Workshop Manual, Group 7: 70 02 19), front wiper arms (See Workshop Manual, Group 9: 92 25 19) and cover for cowl panel (See Workshop Manual, Group 6: 66 44 19).
 - 5.2 Remove complete engine guard (See Workshop Manual, Group 1: 10 80 19 Removing and installing engine guard - section on "Removing").
 - 5.3 Bleed pressure accumulator and front spring strut. To do this, connect PIWIS Tester, select the menu item "Bleed level adjustment in level adjustment system".
 - 5.4 Remove brake caliper (See Workshop Manual, Group 4: 47 39 19) and brake disc (See Workshop Manual, Group 4: 46 50 19).
 - 5.5 Unscrew fastening screws from brake cover panel and remove brake cover panel.
 - 5.6 Remove wheel bearing housing (wheel carrier) (See Workshop Manual, Group 4: 40 50 19).
 - 5.6.1 Pull off connector from self-leveling sensor, lateral acceleration sensor, rpm sensor and compact connector.
 - 5.6.2 Push out tie rod on wheel bearing housing (wheel carrier) with press-out tool T10187.
 - 5.6.3 Remove brake line with brake hose from wheel carrier. To do this, unscrew fastening screws from brake hose holder at the top and brake line holder.
 - 5.6.4 Move drive shaft with universal drive shafts/wheel-hub extractor No. 87-1 approx. 20-25 mm into wheel hub.

Work Procedure:
(cont'd)

- 5.6.5 Unscrew fastening screw for spring strut on lower trailing arm.
- 5.6.6 Push out lower ball joint on wheel bearing housing with press-out tool T10187.
- 5.6.7 Secure wheel bearing housing from falling, press out upper ball joint on wheel bearing housing with press-out tool T10187 and take out wheel bearing housing.
- 5.7 Remove fastening screw/nut for suspension/stabilizer on the stabilizer.
- 5.8 Screw off air connection on spring strut.
- 5.9 Unscrew eccentric screws and fastening nuts from lower trailing arm and remove trailing arm (See Workshop Manual, Group 4: 40 17 19).
- 6. **Convert Steering.**
- 6.1 Remove tie rod from steering rack (See Workshop Manual, Group 4: 48 79 19).
- 6.2 **ONLY** for vehicles with Servotronic steering gear (I No. 1N3) prior to production and delivery date 2-28-2005 or with a VIN lower than 9P65LA91996 - Cayenne Turbo/USA
- 6.2.1 Remove previous steering gear and install new steering gear (955.347.011.11) See Workshop Manual '489019 Removing and installing steering gear'.
- 6.2.2 Remove previous Servotronic control unit and install new control unit (955.618.047.01) See Workshop Manual '486919 Removing and installing Servotronic control unit'.
Note:
Use a new sealing ring and lug hose clamp on the steering gear!
- 6.3 Mount tie rod (955.347.031.50) to steering rack (See Workshop Manual, Group 4: 48 79 19).
Tightening torque: 100 Nm (74 ftlb.)
- 7. Convert front axle (FA), spring strut area, hydraulic mount, anti-roll bars and wheel carriers.
- 7.1 Unscrew fastening screws for spring strut in engine compartment and remove spring strut See Workshop Manual '433019 Removing and installing front spring strut (air spring) - section on "Removing".
- 7.2 Convert spring strut.
- 7.2.1 Fill spring strut with air (See Workshop Manual, Group 4: 43 01).

Work Procedure:
(cont'd)

7.2.2 Remove upper trailing arm, Figure 3, item A. To do this, remove fastening nuts, Figure 3, item B and locking screws, Figure 3, item C.

7.2.3 Fit trailing arm with level sensor, Figure 3, item D to new spring strut using new screws (N 102 902 04) and nuts (N 102 861 02).
Only vehicles with 200 Hz self-leveling sensors. Install new self-leveling sensor (955.341.075.20) with upper trailing arm.

7.2.4 Remove fastening screw and lock nut from suspension/stabilizer (Figure 3, Item F) and install with new screw (N 105 760 01) and nut (N 104 029 01) on new spring strut.

Note:

Tighten lock nut when stabilizer has been mounted on suspension/stabilizer.

7.2.5 Unscrew nut from lateral acceleration sensor (Figure 3, Item E) and fasten lateral acceleration sensor with screw (N 904 407 02) and lock nut (N 023 00 28) to new spring strut.

7.3 Install spring strut.

7.3.1 Replace hydraulic mount by rubber mounting (955.341.242.50) for trailing arm (See Workshop Manual, Group 4: 40 20 55).

7.3.2 Insert spring strut, position with auxiliary pin, and screw down fastening screws (N 910 400 01) in engine compartment.
Tightening torque: 50 Nm (37 ftlb.) + 90°

Note:

It is necessary to enlist the help of a second person.

7.3.3 Install trailing arm with new eccentric screw (955.331.217.00) and lock nut (N 102 686 02).

Note:

Eccentric screw and lock nut are only tightened to the prescribed tightening torque during suspension alignment!

7.3.4 Mount spring strut on trailing arm with screw (N 105 326 01) and lock nut (N 103 353 02).

Note:

Tighten lock nut in vehicle position (See Workshop Manual, Group 4: 43 30 19, Installing front spring strut, Instructions).

7.4 Mount stabilizer on suspension/stabilizer with screw (N 105 668 01) and lock nut (N 104 029 01).

Note:

Tighten lock nut in vehicle position.

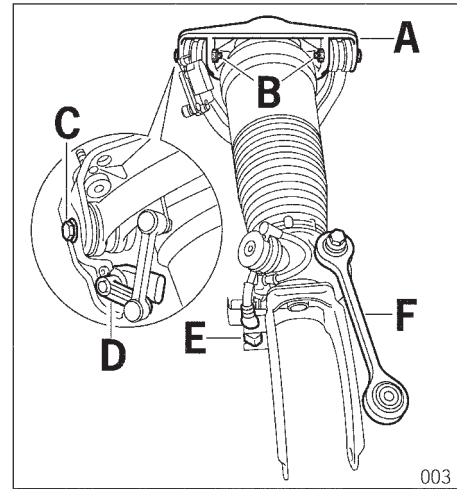


Figure 3

Work Procedure:
(cont'd)

7.5 Tighten lock nut from suspension/stabilizer (Figure 3, Item F).
Tightening torque: 110 Nm (81 ftlb.)

7.6 Install front wheel carrier (See Workshop Manual, Group 4: 40 50 19).

7.6.1 Insert wheel carrier in lower ball joint and position drive shaft.

7.6.2 Install wheel carrier to upper ball joint with nut at top with (N 909 413 01) and bottom with (N 909 771 01)
Tightening torque:

Location	Nm (ftlb.)
Nut for top	110 (81)
Nut for bottom	85 (63)

7.7 Mount brake line (A) (955.355.581.50) to brake hose (B).

Note:

Tighten brake line to brake hose only after mounting the brake line to brake caliper.

7.8 Secure brake hose and brake line to wheel carrier using screws, Figure 4, Inset.
Tightening torque for cable holder screw, Figure 4, item C: 9 Nm (6.5 ftlb.)
Tightening torque for brake hose holder screw, Figure 4, item D: 30 Nm (22ftlb.)

7.9 Mount tie rod ball joint to wheel carrier with nut (N 909 771 01).
Tightening torque: 90 Nm (67 ftlb.)

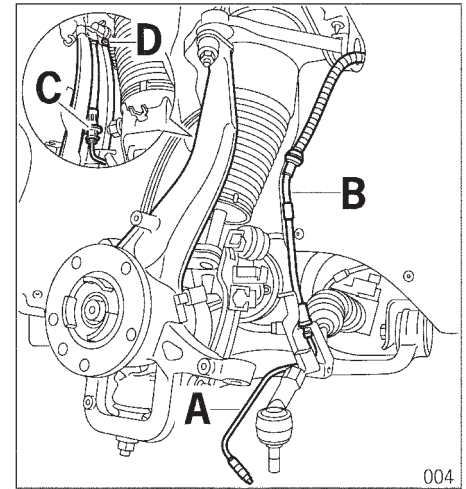


Figure 4

7.10 Pull in drive shaft with assembly fixture T 10206 and install new lock nut (955.341.640.00).

7.11 Lift wheel carrier into normal vehicle position (See Workshop Manual: Group 4: 42 90 19, Installing stabilizer, Instructions) and tighten spring strut to trailing arm and nut from stabilizer to stabilizer mount.
Tightening torque:

Location	Nm	(ftlb.)
Spring strut to trailing arm		150 (111) +90°
Nut for stabilizer to suspension/stabilizer		110 (81)

7.12 Connect connector from self-leveling sensor, lateral acceleration sensor, rpm sensor and compact connector.

7.13 Connect air connection on spring strut.
Tightening torque: 3 Nm (2 ftlb.)

Work Procedure:
(cont'd)

8. Convert front axle brake area and brake ventilation.

8.1 Clip in air-guide element Figure 5, Item I, (955.351.117.00/118.00) to spring strut and fasten with screws (N 105 475 01) and nuts (N 102 058 02).

8.2 Install brake cover panel (955.351.801.51) with fastening screws (N 010 237 12) to wheel carrier.
Tightening torque: 20 Nm (15 ftlb.)

8.3 Install brakes.

8.3.1 Install front brake disc (955.351.401.60) (See Workshop Manual, Group 4: 46 50 19).
Tightening torque: 14 Nm (10.5 ftlb.)

Note:

Use new screw (N 910 282 01).

8.3.2 Install front brake caliper (955.351.421.61/422.61) (See Workshop Manual, Group 4: 47 39 19).

Tightening torque: 270 Nm (200 ftlb.)

Note: Use new screws (N 906 854 02).

8.3.3 Install brake line to brake caliper and tighten brake line to brake hose (Figure 3, Item A and B).
Tightening torque:

Location	Nm (ftlb.)
Brake line to brake calliper	14 (10.5)
Brake line to brake hose	14 (10.5)

8.3.4 Install front brake pads (See Workshop Manual, Group 4: 46 36 20).

Tightening torque:

Brake pad retaining pin, 30 Nm (22 ftlb.)

8.3.5 Fasten warning contact with cable holder (944.612.627.00) to brake line.

8.4 Bleed brake system (See Workshop Manual, Group 4: 47 01 07).

9. Concluding work on front and rear axles.

9.1 Tighten front and rear drive shaft with lock nut.
Tightening torque: 500 Nm (370 ftlb.)

9.2 Install cover for cowl panel (See Workshop Manual, Group 6: 66 44 19).

9.3 Install front wiper arms (See Workshop Manual, Group 9: 92 25 19).

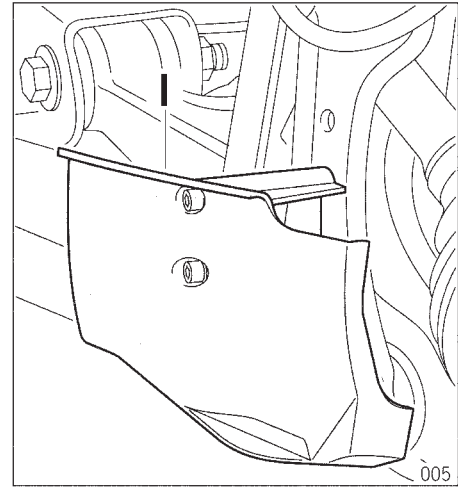


Figure 5

Work Procedure:
(cont'd)

- 10.** Converting engine.
- 10.1** Remove left charge air cooler (See Workshop Manual, Group 2: 21 43 21).
- 10.2** Unclip throttle body cover (See Workshop Manual, Group 1: 10 83 19).
- 10.3** Remove air box for throttle housing (Y-shaped pipe) (See Workshop Manual, Group 2: 24 35 19).
- 10.4** Remove pressure pipe together with pressure hose. Only the right-hand side is described here.
- 10.4.1** Loosen clamp, Figure 6, item A and pull bypass hose off pressure pipe and pressure hose, Figure 6, item B.
- 10.4.2** Lever out wire clip, Figure 6, item C using a screwdriver and remove pressure pipe and pressure hose, Figure 6, item B. Put wire clip back into installation position immediately.

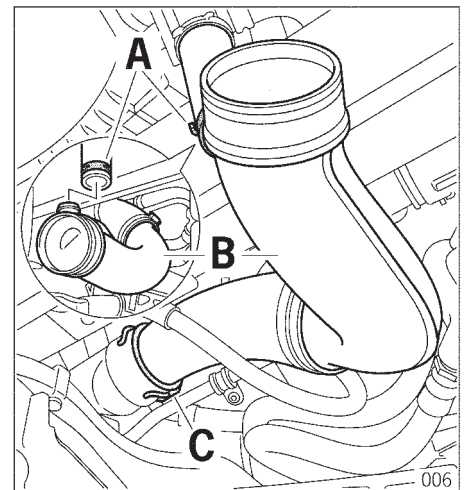


Figure 6

- 10.5** Loosen hose clamp, Figure 7. item A and remove left pressure hose, item B.

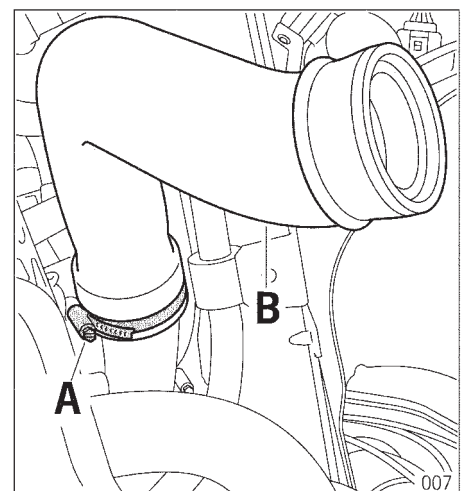


Figure 7

Work Procedure:
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- 10.6** Install pressure pipe with left pressure hose.
- 10.6.** Slide left pressure hose (955.110.837.00) onto left pressure pipe (955.110.368.00) and join hose clamp (N 024 505 6). Observe assembly position (Figure 8, inset A)!
- 10.6.2** Fasten pressure pipe with left pressure hose with hose clamp to turbocharger. Marks (inset B) must align.

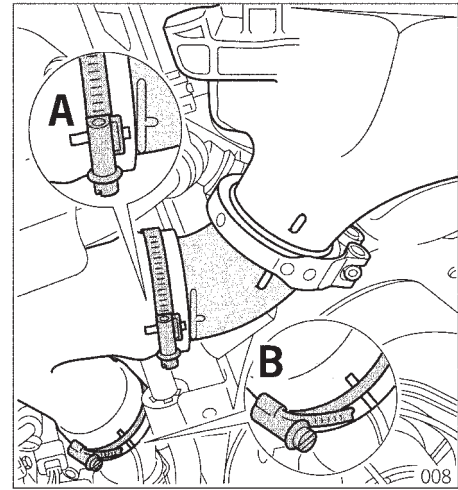


Figure 8

- 10.7** Install pressure pipe with right pressure hose.
- 10.7.1** Slide right pressure hose (955.110.838.00) onto right pressure pipe (955.110.367.00) and join with hose clamp (N 024 505 6). Observe assembly position (Figure 9, inset)!
- 10.7.2** Insert pressure pipe with right pressure hose (A) in turbocharger. Wire clip must engage audibly.
- 10.7.3** Fasten bypass hose (B) with clamp to pressure pipe with right pressure hose.

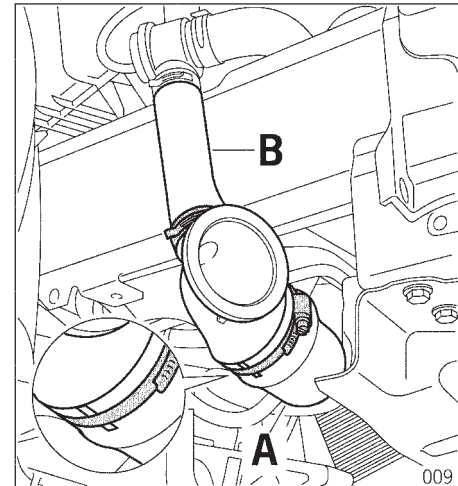


Figure 9

Work Procedure:
(cont'd)

- 10.8.** Install left charge air cooler (See Workshop Manual, Group 2: 21 43 21).
- 10.8.1** Slide ventilation guide (955.575.339.40) onto left charge air cooler (955.110.803.41), engagement will be felt.
- 10.8.2** Move left charge air cooler with ventilation guide into installation position.

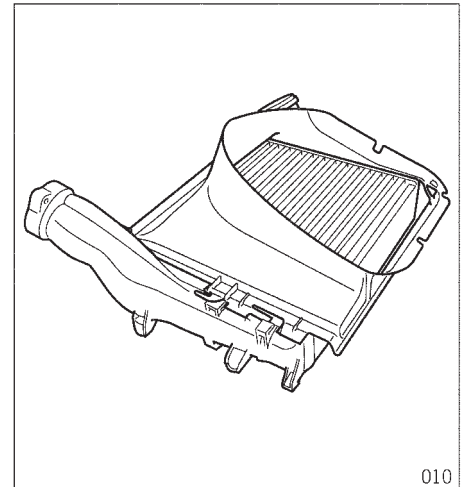


Figure 10

- 10.8.3** Position sealing ring, Figure 11, item A, (N 106 203 01) between left charge air cooler (B) and pressure pipe with pressure hose (C).
- 10.8.4** Secure left charge air cooler and pressure pipe with clamp (955.110.807.00). Marks (cut-out D) must be opposite each other.
- 10.8.5** Fasten upper left pressure pipe with screws (N 103 231 01) to left charge air cooler. Tightening torque: 10 Nm (7.5 ftlb.)
- 10.8.6** Screw down charge air cooler. Tightening torque: 8 Nm (6 ftlb.)
- 10.8.7** Insert air guide (955.575.331.40) in front of charge air cooler sideways.

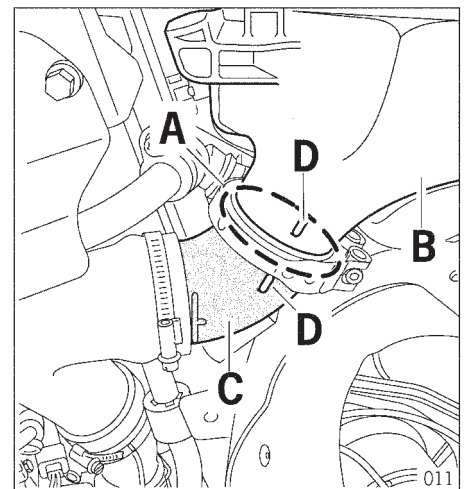


Figure 11

- 10.9** Install right charge air cooler similar to the left vehicle side.

Work Procedure:
(cont'd)

- 10.10. Concluding work on engine.
- 10.10.1 Clip retaining clip, Figure 12, Item A for airbag sensor line.
- 10.10.2 Install air box for throttle housing (Y-shaped pipe) (See Workshop Manual, Group 2: 24 35 19).
- 10.10.3 Clip in throttle body cover (See Workshop Manual, Group 1: 10 83 19).

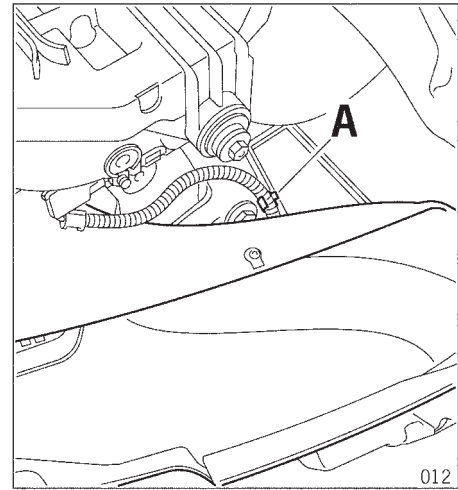


Figure 12

- 10.10.4 Stamp the letter S under the slash of the standard engine number in the crankcase.
- 10.10.5 Install complete engine guard (See Workshop Manual, Group 1: 10 80 19).
- 10.10.6 Install front apron (See Workshop Manual, Group 6: 63 15 19).
- 10.10.7 Install front trim panel (engine compartment) (See Workshop Manual, Group 7: 70 02 19).
- 11. Mount wheels (See Workshop Manual, Group 4: 44 05 19).
Tightening torque: 160 Nm (118 ftlb.).

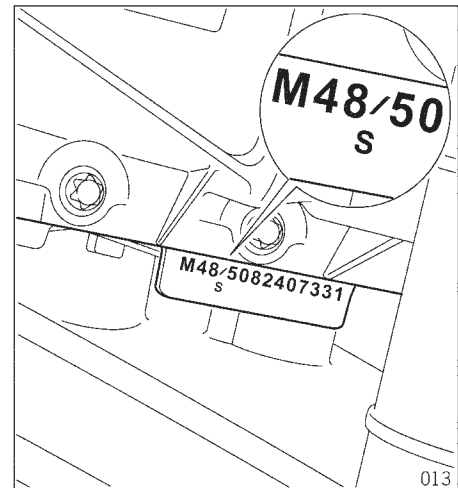


Figure 13

- 12. Program control units and perform suspension alignment.
- 12.1 General information on the DME control unit
- 12.1.1 With the introduction of the V8 Turbo KIT, the following new diagnostis software number (DSN) and data records are available:

Type	MY	DSN	Version	Program and Data Status
Cayenne	As of '03	P9103	KIT LEV (Tiptronic)	0125
Cayenne	As of '05	P9103	KIT LEV (Tiptronic)	0128
- 12.1.2 DME Turbo KIT data records can only be programmed with the PIWIS Tester using V6.0 or higher.

Work Procedure:
(cont'd)

- 12.1.3** Prerequisites for successful programming:
- Turbo data record for standard vehicle -without I No. E81- must be programmed on the DME control unit;
 - DME control unit must be adapted (taught) to suit the vehicle (including immobilizer code!);
 - Immobilizer code and increased performance enabling code must be enabled in IPAS.
- 12.2** Program DME control unit.
- 12.2.1** Connect PIWIS Tester and switch on ignition.
- 12.2.2** Select vehicle type and DME control module. Proceed with [>>].
- 12.2.3** Select Program control unit. Proceed with [>>].
- 12.2.4** Enter vehicle type, model year, transmission, and emission standard. Proceed with [>>].
- 12.2.5** Enter immobilizer code. Proceed with [>>] and confirm with [F7].
- 12.2.6** Enter enabling code. Proceed with [>>].
- 12.2.7** Program by pressing [F8].
- 12.2.8** When programming has ended, start vehicle and then switch off ignition.
- 12.3** Remove level adjustment control unit and install new control unit (955.618.301.41) (See Workshop Manual, Group 4: 43 16 19).
Note:
The control unit will be calibrated as is necessary when a suspension alignment is performed.
- 12.4** General information on the level adjustment control unit. The following new DSN has been newly added:
DSN
1001 New DSN for Turbo KIT scopes
- 12.4.1** A Turbo KIT level adjustment control unit can only be coded/taught with the PIWIS Tester with V6.0 and higher.
The following function is complete:
Coding:
- the level adjustment control unit should be replaced and recoded for Turbo KIT
 - the level adjustment control unit can only be coded if the Turbo KIT DME data records have been successfully programmed.
 - coding is valid for Turbo KIT: Cayenne V8 RoW Turbo KIT
- The Turbo KIT level adjustment control unit cannot be taught/coded on a vehicle without Turbo KIT.
- 12.5** Code level adjustment control unit.
- 12.5.1** Select vehicle type and level adjustment control unit.
- 12.5.2** Select coding and code country selection.

Work Procedure:
(cont'd)

- 12.5.3** Read out fault code and erase it if necessary.
- 12.6** Disconnect PIWIS Tester, switch off ignition and disconnect battery charger.
- 12.7** Perform complete suspension alignment (See Workshop Manual, Group 4: 44 IN).
Note:
The differences from adjustment values for the Cayenne without Increased performance are listed in the following table.

Front Axle

Camber -21' +/- 20'
Steering error angle +8° 45' +/- 30'

Rear Axle

Camber -1° 28 +/- 20'

Vehicle Heights

Front 182 mm Rear 228 mm

- 13.** Check main and fog light settings and adjust if necessary. (See Workshop Manual, Group 9: 94 15 19 and 94 16 19.)

Working Time:

Labor Operation	Description	Time Units
10 01 31 00	Turbo Engine Increases Performance Kit Includes: Rear wheel bearing, brake discs and brake calipers front and rear, front spring struts and tie rods, charge air cooler, and lower pressure hoses replaced, air spring control unit, and rear and front level sensors, replaced if necessary. Hydraulic mount from trailing arm replaced by rubber mounting. Programming DME control module and coding level adjustment control unit. Without: Performing suspension alignment, roller brake tester, filling spring struts with air, if necessary, mounting tires on new rims and test drive. Replacing Servotronic steering gear (I No. 1N3) and Servotronic control unit - separate damage code!	1470 TU
48 90 44 00	Replacing Servotronic steering gear (I No. 1N3) and Servotronic control unit Includes: Removing and installing Servotronic steering gear and heat shield, draining and filling hydraulic fluid, bleeding steering gear, removing and installing trim panel for dashboard and Servotronic control unit. Without: Removing and installing wheels, removing and installing engine guard, removing and installing underside panels, removing and installing front wheel housing liner, removing and installing tie rods. Working according to performance increase (see above)	140 TU

References:

- Cayenne Workshop Manual, Group 1/2/3/4/6/7/9
- > Workshop Manual
 - 10 80 19 – Removing and installing engine guard
 - 10 83 19 – Removing and installing design cover
 - 21 43 21 – Removing and installing charge air cooler
 - 24 35 19 – Removing and installing cowl for throttle part (Y-shaped pipe)
 - 26 01 19 – Removing and installing exhaust system
 - 27 06 IN – General information and on vehicle battery
 - 39 01 19 – Removing and installing rear final drive
 - 39 35 19 – Removing and installing rear cardan shaft
 - 39 77 19 – Removing and installing transverse lock servo motor
 - 39 90 35 – Checking oil level for rear final drive and topping up
 - 40 17 19 – Removing and installing lower trailing arm
 - 40 20 55 – Replacing bearing for trailing arm
 - 40 50 19 – Removing and installing front wheel bearing housing (wheel carrier)
 - 42 58 19 – Removing and installing rear-wheel bearing
 - 42 90 19 – Removing and installing stabilizer
 - 42 21 19 – Removing and installing rear drive shaft
 - 43 01 IN – Filling specification for air-spring strut
 - 43 16 19 – Removing and installing control unit for air suspension
 - 43 19 19 – Removing and installing rear level sensor
 - 43 30 19 – Removing and installing front spring strut (air spring)
 - 44 IN – Suspension alignment, complete
 - 44 05 19 – Removing and installing wheel
 - 45 11 19 – Removing and installing front speed sensor
 - 46 36 20 – Removing and installing front disc brake pads
 - 46 50 19 – Removing and installing front brake disc
 - 46 53 19 – Removing and installing rear brake disc
 - 46 83 16 – Adjusting foot operated parking brake
 - 47 01 07 – Bleeding brake system
 - 47 39 19 – Removing and installing front brake caliper
 - 47 41 19 – Removing and installing rear brake caliper
 - 48 79 19 – Removing and installing tie rod
 - 63 15 19 – Removing and installing front apron
 - 66 44 19 – Removing and installing cowl panel cover
 - 70 02 19 – Removing and installing front trim (engine compartment)
 - 92 25 19 – Removing and installing wiper arm
 - 94 15 19 – Removing and installing main headlight
 - 94 16 19 – Removing and installing fog lights
- > Technical Information Bulletins, Group 4
 - #9/04 – Wheels for 19-inch brake discs
 - #4/05 – Increased Performance - Shaking in Steering Wheel

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